



Commonwealth of Virginia  
Virginia Information Technologies Agency

**AERIAL DATA ACQUISITION, GROUND CONTROL, AERO TRIANGULATION & DEVELOPMENT  
SERVICES**

Authorized Users: State agencies, Institutions, and other public bodies as defined in Section 2.2-4301 of the VPPA

Date: February 7, 2008

Contract #: VA-060317-SANB

Contractor: Sanborn Map Company  
1935 Jamboree Drive  
Suite 100  
Colorado Springs, CO 80920  
Phone: 1-866-726-2676 (sanborn)

Contact: David Lewis, Sales  
Phone: 703-481-9016

FIN: 13-3980333

Term: March 17, 2008 – March 16, 2009  
(or initial project completion, whichever comes first)

Payment: Net 30 days

For Additional Information, Please Contact:

Virginia Information Technologies Agency  
Supply Chain Management

Doug Crenshaw  
Phone: 804-416-6160  
Fax: 804-416-6361  
E-Mail: [doug.crenshaw@vita.virginia.gov](mailto:doug.crenshaw@vita.virginia.gov)

NOTES: Individual Commonwealth of Virginia employees are not authorized to purchase products or services for their personal use from this Contract.

For updates, please visit our Website at <http://www.vita.virginia.gov/procurement/contracts.cfm>

**VIRGINIA INFORMATION TECHNOLOGIES AGENCY (VITA):** Prior review and approval by VITA for purchases in excess of \$100,000.00 is required for State Agencies and Institutions only.

CONTRACT #VA-060317-SANB

## CONTRACT CHANGE LOG

Change No.	Description of Change	Effective Date
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**MODIFICATION #5  
TO  
CONTRACT NUMBER VA-060317-SANB  
BETWEEN THE  
COMMONWEALTH OF VIRGINIA  
AND  
SANBORN MAP COMPANY**

This MODIFICATION is an agreement between the Commonwealth of Virginia, hereinafter referred to as "State" or "Commonwealth" or "VITA" (Virginia Information Technologies Agency), and Sanborn Map Company, hereinafter referred to as "Contractor" relating to the modification of the above Contract. This Modification is hereby incorporated into and made an integral part of Contract VA-060317-SANB (the Agreement), as modified.

The purpose of this Modification is to make the following change to the Contract:

**Ref. Section 3: "Term and Termination"**

VITA is exercising its option to extend the Contract for a one year period from March 16, 2008 through March 16, 2009.

**Ref. Section 17: "Performance and Payment Bonds"**

There will be no bonding requirement with regard to the work anticipated for the extension period March 16, 2008 through March 16, 2009.

ALL OTHER CONTRACT TERMS SHALL REMAIN UNCHANGED.

The foregoing is the complete and final expression of the parties' agreement to modify Contract VA-060317-SANB and cannot be modified, except by a writing signed by duly authorized representatives of both parties.

ALL OTHER TERMS AND CONDITIONS REMAIN UNCHANGED.

**PERSONS SIGNING THIS CONTRACT ARE AUTHORIZED REPRESENTATIVES OF EACH PARTY TO THIS CONTRACT AND ACKNOWLEDGE THAT EACH PARTY AGREES TO BE BOUND BY THE TERMS AND CONDITIONS OF THE CONTRACT.**

SANBORN MAP COMPANY

BY: B. Craig MacDaniel

NAME: B. Craig MacDaniel

TITLE: Vice President, Corporate Contracts

DATE: 2/5/2008

COMMONWEALTH OF VIRGINIA

BY: Doug Crenshaw

NAME: Doug Crenshaw

TITLE: Sourcing Manager

DATE: 2-5-08

**MODIFICATION #4  
TO  
CONTRACT NUMBER VA-060317-SANB  
BETWEEN THE  
COMMONWEALTH OF VIRGINIA  
AND  
SANBORN MAP COMPANY**

This MODIFICATION is an agreement between the Commonwealth of Virginia, hereinafter referred to as "State" or "Commonwealth" or "VITA" (Virginia Information Technologies Agency), and Sanborn Map Company, hereinafter referred to as "Contractor" relating to the modification of the above Contract. This Modification is hereby incorporated into and made an integral part of Contract VA-060317-SANB (the Agreement), as modified.

The purpose of this Modification is to make the following change to the Contract:

Adjustment for Contract Price Increase due to State requests for additional upgrades (see Exhibit A, attached).

No damages or penalties will apply to this Change Request. No increase or change in bonding requirements will apply to this Change Request.

Contract increase of four thousand two hundred and 96 dollars (\$4,296.00).

ALL OTHER CONTRACT TERMS SHALL REMAIN UNCHANGED.

The foregoing is the complete and final expression of the parties' agreement to modify Contract VA-060317-SANB and cannot be modified, except by a writing signed by duly authorized representatives of both parties.

ALL OTHER TERMS AND CONDITIONS REMAIN UNCHANGED.

**PERSONS SIGNING THIS CONTRACT ARE AUTHORIZED REPRESENTATIVES OF EACH PARTY TO THIS CONTRACT AND ACKNOWLEDGE THAT EACH PARTY AGREES TO BE BOUND BY THE TERMS AND CONDITIONS OF THE CONTRACT.**

SANBORN MAP COMPANY

BY: Llana Hines

NAME: Llana Hines

TITLE: General Manager

DATE: 12/3/07

COMMONWEALTH OF VIRGINIA

BY: Dan Crews

NAME: Dan Crews

TITLE: Sourcing Manager

DATE: 12/6/07





## Change Request Form

### EXHIBIT A

<b>Project Name:</b>	VGIN	<b>Request Number:</b>	Eight
		<b>Date of Request:</b>	November 30, 2007
<b>Client Name:</b>	0708	<b>Requested by:</b>	Krysia Sapeta
<b>Description of Requested Change:</b>			
<u>Item 1: Contour upgrades</u>			
<b>Reason for Change:</b>			
Request by State of VA for additional contour upgrades for 36 tiles in the Shenandoah area (area provided in shapefile format by the State; illustration below)			
<b>Impact of Requested Change On Project:</b>			
<i>Time Schedule</i>	April 30, 2008		
<i>Contract Pricing</i>	<u>Item 1: Contour upgrades</u> 200 scale (1 foot resolution) tiles (5,000 feet x 5,000 feet) = <b>\$36.00 / tile</b>  Additional Contours 4': 36 X \$ 36.00/tile = \$ 1,296.00 Setup Fee @ \$ 3,000 per product = \$ 3,000.00  <b>TOTAL Contour Upgrade Additions Cost: \$ 4,296.00</b>		

TO Contract Value Increase

**Contract increase of \$4,296.00 for new contract value of \$8,163,825.19**

No penalties or liquidated damages liabilities apply to the contract as of the implementation date of this Change Request. No increase or change in bonding requirements will apply to this Change Request. Force Majeure provisions apply in full.

Change request approved ☒

Change request rejected ☐

Date approved change will be

implemented: November 28, 2007

*For VGIN:*

\_\_\_\_\_  
*Signature*

\_\_\_\_\_  
*Printed Name*

\_\_\_\_\_  
*Title*

*For Sanborn:*

Llana Hines  
*Signature*

Llana Hines

*Printed Name*

General Manager

*Title*





**MODIFICATION #2  
TO  
CONTRACT NUMBER VA-060317-SANB  
BETWEEN THE  
COMMONWEALTH OF VIRGINIA  
AND  
SANBORN MAP COMPANY**

This MODIFICATION is an agreement between the Commonwealth of Virginia, hereinafter referred to as "State" or "Commonwealth" or "VITA" (Virginia Information Technologies Agency), and Sanborn Map Company, hereinafter referred to as "Contractor" relating to the modification of the above Contract. This Modification is hereby incorporated into and made an integral part of Contract VA-060317-SANB (the Agreement), as modified.

The purpose of this Modification is to make the following change to the Contract:

Adjustment for Contract Price Increase for projection of 2006 and 2007 digital orthophotography to data to Lambert 1-meter based on the tile grid supplied by VGIN and delivered in GeoTIFF format. A four-tile pilot will be provided initially to confirm proper formatting. See attached document for details.

No damages or penalties will apply to this Change Request. No increase or change in bonding requirements will apply to this Change Request.

Contract increase of seventy thousand dollars (\$70,000.) for new contract value of seven million nine hundred nine thousand two hundred eighty eight dollars (\$7,909,288.00)

ALL OTHER CONTRACT TERMS SHALL REMAIN UNCHANGED.

The foregoing is the complete and final expression of the parties' agreement to modify Contract VA-060317-SANB and cannot be modified, except by a writing signed by duly authorized representatives of both parties.

ALL OTHER TERMS AND CONDITIONS REMAIN UNCHANGED.

**PERSONS SIGNING THIS CONTRACT ARE AUTHORIZED REPRESENTATIVES OF EACH PARTY TO THIS CONTRACT AND ACKNOWLEDGE THAT EACH PARTY AGREES TO BE BOUND BY THE TERMS AND CONDITIONS OF THE CONTRACT.**

SANBORN MAP COMPANY

BY: B. Craig McDaniel  
NAME: B. Craig McDaniel  
TITLE: VICE PRESIDENT  
DATE: 6/28/2007

COMMONWEALTH OF VIRGINIA

BY: Day Crenshaw  
NAME: Day Crenshaw  
TITLE: Strategic Services mgr  
DATE: 7/2/07





### Change Request


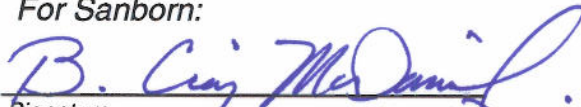




<b>Project Name:</b>	VGIN	<b>Request Number:</b>	Six
		<b>Date of Request:</b>	June 18, 2007
<b>Client Name:</b>	0708	<b>Requested by:</b>	Krysia Sapeta
<b>Description of Requested Changes:</b>			
1) Authorization for Contract Price Increase for projection of 2006 and 2007 digital orthophotography to data to Lambert 1-meter based on the tile grid supplied by VGIN and delivered in GeoTIFF format. A four-tile pilot will be provided initially to confirm proper formatting. Please note some stretching, compression of pixels, or other anomalies may occur during transformation.			
<b>Reason for Change:</b>			
VGIN request for 1-meter Statewide data			
<b>Impact of Requested Changes On Project:</b>			
<b>Time Schedule</b>	No damages or penalties will apply to this Change Request. No increase or change in bonding requirements will apply to this Change Request.		
<b>Contract Pricing</b>	Contract increase of seventy thousand dollars (\$70,000.) for new contract value of seven million nine hundred nine thousand two hundred eighty eight dollars (\$7,909,288.00)		

Change request approved ☒

Change request rejected ☐

Date approved change will be

implemented: **June 19, 2007**

<b>For VGIN:</b>		<b>For Sanborn:</b>	
			
<b>Signature</b>		<b>Signature</b>	
			
<b>Printed Name</b>		<b>Printed Name</b>	
			
<b>Title</b>		<b>Title</b>	

## Attachment A Contract Terms

Except as expressly modified herein, all other terms and conditions of Prime Contract remain in full force and effect.

## Attachment B Specifications

### 1-Meter Ortho Imagery

Sanborn will produce rectified Ortho Imagery at a resolution of 1-meter (see **Attachment B.1**).

The imagery will meet or exceed National Map Accuracy Specifications for 1:12000 (1"=1000') map scale.

## Attachment C Deliverables and Shipment

### Item 1;

#### 1-Meter Imagery;

Phase 1 (Year 2006) Phase 1 (Year 2006) 2 weeks after acceptance of all data or acceptance of pilot, whichever is later.

Phase 2 (Year 2007 imagery; one month after acceptance of entire project area

Metadata

## Attachment D Acceptance Criteria

### 1-Meter Ortho Imagery Acceptance Criteria

Existing 2006/2007 Ortho Imagery is used for this deliverable. There are inherent anomalies that may be introduced into the data during projection. These include either stretching or shrinking of pixels, or other artifacts

## Attachment E Schedule of Invoicing and Payments

### Compensation

VGIN agrees to pay Sanborn as follows for the completion of the Work and successful production and delivery of the Services identified in **Attachment B** and as follows:

VGIN agrees to pay Sanborn the Firm Fixed Fee of seventy thousand dollars (\$70,000.00), 15% year 2006 upon delivery and 85% year 2007 upon delivery. The price is based on the Specifications in **Attachment B**.

Payment is conditional upon the Deliverables meeting all of the specifications and criteria for acceptance contained in **Attachment**

### Invoicing and Payment Terms

Sanborn may invoice VGIN upon delivery according to the percentage complete as shown in the table in **Attachment C**. Sanborn invoices shall contain be consistent with current invoicing requirements.

## **Attachment B.1**

### **Digital Ortho Imaging Procedures for Virginia 2007 1-meter Delivery:**

#### **Procedures:**

As imagery is accepted by the State, the imagery will be sub-sampled to 1-meter and projected to Lambert Conical projection. The imagery will be delivered in two major phases:

- 1) Data completed and accepted from imagery acquisition in 2006
- 2) Data completed and accepted from imagery acquisition in 2007

The tile layout provided by the State will be used for final delivery tile



**MODIFICATION #1  
TO  
CONTRACT NUMBER VA-060317-SANB  
BETWEEN THE  
COMMONWEALTH OF VIRGINIA  
AND  
SANBORN MAP COMPANY**

This MODIFICATION is an agreement between the Commonwealth of Virginia, hereinafter referred to as "State" or "Commonwealth" or "VITA" (Virginia Information Technologies Agency), and Sanborn Map Company, hereinafter referred to as "Contractor" relating to the modification of the above Contract. This Modification is hereby incorporated into and made an integral part of Contract VA-060317-SANB (the Agreement), as modified.

The purpose of this Modification is to make the following change to the Contract:

Adjustment to the final contract price to account for all final 2006 and 2007 1' tile counts, 2' and 4' upgrades and structures. Refer to attached spreadsheet (VGIN 2006-2007 Tiles Count.XLS) for breakdowns.

ALL OTHER CONTRACT TERMS SHALL REMAIN UNCHANGED.

The foregoing is the complete and final expression of the parties' agreement to modify Contract VA-060317-SANB and cannot be modified, except by a writing signed by duly authorized representatives of both parties.

ALL OTHER TERMS AND CONDITIONS REMAIN UNCHANGED.

PERSONS SIGNING THIS CONTRACT ARE AUTHORIZED REPRESENTATIVES OF EACH PARTY TO THIS CONTRACT AND ACKNOWLEDGE THAT EACH PARTY AGREES TO BE BOUND BY THE TERMS AND CONDITIONS OF THE CONTRACT.

SANBORN MAP COMPANY

BY: \_\_\_\_\_

NAME: \_\_\_\_\_

TITLE: \_\_\_\_\_

DATE: \_\_\_\_\_

COMMONWEALTH OF VIRGINIA

BY: \_\_\_\_\_

NAME: \_\_\_\_\_

TITLE: \_\_\_\_\_

DATE: \_\_\_\_\_



Modification #1  
 VA-060317-SANB  
 February 28, 2007

			Cost Per Tile	Total	
<b>PROJECTED VGIN Contract without contours/structures</b>					
1' (200 scale)	43,305		\$115.43	\$4,998,696.15	
6" (100 Scale)	18,529		\$85.25	\$1,579,597.25	39,255
<b>Total:</b>				<b>\$6,578,293.40</b>	
<b>VGIN 2006 Tile Counts</b>					
Total 1 foot Tiles North (200 Scale)	2,897		\$115.43	\$334,400.71	
Total 1 foot Tiles South (200 Scale)	1,153		\$115.43	\$133,090.79	-5,392
Total 6 inch North (100 scale)	5,954		\$85.25	\$507,578.50	
Total 6 inch South (100 scale)	4,391		\$85.25	\$374,332.75	
<b>Sub-Total</b>				<b>\$1,349,402.75</b>	
<b>2007 Tile Counts</b>					
North 1' (200 Scale)	6,404		\$115.43	\$739,213.72	
South 1' (200 Scale)	32,847		\$115.43	\$3,788,443.21	
North 6" (100 scale)	4,712	4,712	\$76.90	\$362,352.80	
South 6" (100 scale)	8,864	8,864	\$76.90	\$681,641.60	
<b>Sub-Total:</b>				<b>\$5,551,651.33</b>	
<b>TOTAL:</b>				<b>\$6,901,054.03</b>	
<b>Contour Add-ons</b>					
North 2'		5793	\$23.11	\$133,876.23	
South 2'		1980	\$23.11	\$45,757.80	
North 4'		795	\$36.00	\$28,620.00	
South 4'		314	\$36.00	\$29,304.00	
Jurisdiction Product Fee		28	\$3,000.00	\$84,000.00	
<b>Total Contours 2006 (see change order detail)</b>				<b>\$321,658.03</b>	
<b>Structures (see change order detail)</b>				<b>\$51,380.00</b>	
<b>TOTAL 2006 Add-ons</b>				<b>\$372,938.03</b>	
<b>2007 Contours</b>					
North 2' contours	1940	1940	\$23.11	\$44,833.40	
South 2' Contours	5664	5664	\$23.11	\$130,895.04	
North 4' Contours		690	\$36.00	\$24,840.00	
South 4' Contours		3693	\$36.00	\$132,948.00	
Jurisdiction Product Fee		22	\$3,000.00	\$66,000.00	
<b>Credit (duplicate polygons 2006)</b>		68	\$23.11	-\$1,571.48	
<b>Contours Total</b>				<b>\$397,944.96</b>	
<b>Structures</b>					
Buchanan 1'				\$11,038.11	
Fairfax City 6"				\$12,532.26	
Lynchburg City 6"				\$32,220.82	
New Kent 6"				\$6,803.36	
Page 1'				\$9,591.59	
Scott 6"				\$11,407.20	
Norton CITY				\$2,349.00	
Spotsylvania				\$38,854.56	
Nelson				\$7,819.00	
<b>Total Structures</b>				<b>\$132,415.92</b>	
<b>Re-Design of Flight Plan 2/8/07</b>				<b>\$15,000.00</b>	
<b>Jamestown Additional Add-On</b>				<b>\$19,935.00</b>	
<b>TOTAL Contract Value</b>				<b>\$7,630,267.93</b>	
<b>Variance from projected</b>					
Previous Change Order				\$1,260,994.59	
Additional Change Order				\$372,938.03	
				<b>\$668,056.58</b>	

# SANBORN SERVICE CONTRACT VA-060317-SANB

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## SANBORN SERVICES CONTRACT

THIS SERVICES CONTRACT ("Contract") is entered into by and between the Virginia Information Technologies Agency (hereinafter referred to as "VITA"), pursuant to §2.2-2012, and Sanborn Map Company, Inc. ("Supplier") to be effective as of 3/17, 2006 ("Effective Date"). VITA and Supplier are referred to herein individually as "Party" and collectively as the "Parties."

### 1. PURPOSE AND SCOPE

This Contract sets forth the terms and conditions under which Supplier shall provide Services to the Authorized Users.

### 2. DEFINITIONS

#### A. Acceptance

Acceptance shall take the form of successful performance of the Deliverables from Sanborn, or from any 3<sup>rd</sup> party subcontracted through Sanborn at the completion of Acceptance testing in conformance with the Requirements unless agreed to in writing by Sanborn and VITA..

#### B. Agent

Any third-party independent agent of any Authorized User.

#### C. Authorized User

All public bodies, including VITA and all Commonwealth agencies, as defined by §2.2-4301 and referenced by §2.2-4304 of the Code of Virginia.

#### D. Confidential Information

Subject to the exclusions in the Confidentiality Section herein, any confidential or proprietary information of a Party that is disclosed in any manner, including oral or written, graphic, machine readable or other tangible form, to the other Party in connection with or as a result of discussions related to this Contract, and which at the time of disclosure either (i) is marked as being "Confidential" or "Proprietary", (ii) is otherwise reasonably identifiable as the confidential or proprietary information of the Disclosing Party, or (iii) under the circumstances of disclosure should reasonably be considered as confidential or proprietary information of the disclosing Party.

#### E. Deliverable

Any data set to be produced by Supplier hereunder, as described in Exhibit A, Statement of Work, or in any Task Order.

#### F. Product

Primary Product is digital orthophotography, base digital terrain model (DTM), and all ancillary data products, reports, and material related to DTM and digital orthophotography.

Final Primary Product is digital orthophotography by jurisdiction, base digital terrain model (DTM) by jurisdiction, and all ancillary products, reports, and material related to DTM and digital orthophotography by jurisdiction.

Secondary Products are Contours, structure planimetrics, and colored infra-red imagery/data.

#### G. Requirements

The functional, performance, operational, compatibility, Acceptance testing criteria and other parameters and characteristics of the Service, as more fully described in Exhibits A and C

#### H. Service

Any work performed or service provided for an Authorized User, including any Deliverable described in the SOW (Exhibit A) or in any Task Order, by Supplier under this Contract.

#### I. Statement of Work (SOW)

Statement of Work means the Services to be performed by Supplier in as described in Exhibit A to this Contract.



**J. Supplier**

Includes any individual who is an employee, sub-contractor, or independent contractor of Supplier who is assigned by Supplier to perform Services under this Contract.

**K. Supplier's Proposal**

Proposal submitted by Supplier and accepted by VITA, attached, with modifications, hereto as part of Exhibit A that describes the Services to be performed by Supplier.

**L. Task Order**

A written document issued by an Authorized User to order Secondary Product as described in Exhibit A. To be effective, a Task Order must be signed by both Supplier and an Authorized User. No Task Orders shall be issued prior to completion of the SOW without VITA's written consent.

**M. VITA**

Chapter 20.1 (§§2.2-2005 et seq.) of the Code of Virginia.

**N. VGIN**

Virginia Geographic Information Network, a division of VITA.

**O. Warranty Period**

For Final Primary Product, one year from delivery of accepted Final Primary Product Acceptance by the state. For Secondary Product, one year from delivery of accepted Secondary Product to the local jurisdictions.

**P. Work Product**

All papers, reports, forms, materials, creations, data, or inventions created or developed in the performance of this Contract.

**3. TERM AND TERMINATION**

This Contract is effective and legally binding as of the Effective Date and, unless terminated as provided for in this section, shall continue to be effective and legally binding for the duration of the Project as detailed in the RFP and Exhibit A to this Contract. VITA may, at its sole discretion, extend this Contract for up to three additional one-year periods after the completion and Acceptance of the original project. VITA will issue a written notification to the Supplier stating the proposed extension period, thirty (30) days prior to the expiration of any current term.

VITA shall have the unilateral right to terminate this Contract for default. Supplier shall be deemed in default in the event that any one or more of the following events occur or continue during the term defined above:

- i). Supplier fails to deliver the Services and Deliverables required by this Contract by the specified delivery date,
- ii). Supplier repeatedly fails to respond to requests for corrections within the time limits set forth in this Contract, or
- iii). Supplier is in breach of any of the other terms set forth within this Contract.

If VITA deems the Supplier to be in default, VITA shall issue a "Show Cause Notice" identifying the failure and providing Supplier ten (10) days to cure the failure/nonperformance or present an acceptable plan to correct such failure. If Supplier fails to answer the Show Cause Notice, or does not correct the deficiencies noted, VITA may immediately terminate for default this Contract. Supplier shall deliver to VITA all work in progress as of the time of termination. Upon termination for default, VITA shall have no future liability except for payment for: (i) Deliverables accepted prior to the termination date and (ii) work in progress which shall be pro-rated based on percentage of all Deliverables that are determined to be complete based on agreed upon Acceptance Criteria and Acceptance by VITA or its Agent, which shall be paid to Supplier within thirty (30) days of the Supplier's submission of a valid final invoice to VITA.

All costs of de-installation and return of the equipment shall be at Supplier's expense. Supplier shall submit any dispute to VITA for resolution according to the terms of the Dispute Resolution section.

VITA's failure to exercise its right to terminate for default under this provision shall not be construed as a waiver of its right to terminate for default, rescind or revoke this Contract in the event of any subsequent breach of any provisions of such Contract.

VITA may terminate for convenience this Contract, in whole or in part, upon not less than thirty (30) days prior written notice at any time for any reason. Supplier shall submit any contractual dispute to VITA for resolution according to the terms of the Dispute Resolution Section. Upon termination for convenience, VITA shall have no future liability except for payment for: (i) Deliverables accepted prior to the termination date and (ii) work in progress which shall be pro-rated based on percentage of all Deliverables that are determined to be complete based on agreed upon Acceptance Criteria and Acceptance by VITA or its Agent, which shall be paid to Supplier within thirty (30) days of the Supplier's submission of a valid final invoice to VITA.

#### **4. SERVICES**

##### **A. Nature of Services and Engagement**

Supplier is an independent contractor engaged to perform certain Services, as set forth in the Statement of Work and in Task Orders. Both Parties acknowledge that this Contract is non-exclusive, in that any Authorized User may utilize the services of others, and Supplier may provide services to others so long as those services do not breach the terms of this Contract.

##### **B. Statement of Work (SOW) and Task Orders**

All Services shall be performed at the times and locations set forth in the SOW or in a Task Order and at the rates set forth in Exhibit B. Supplier shall not be obligated to commence any work unless and until funding has been obligated to this project. Supplier personnel shall maintain records of tasks performed, which shall be submitted or made available for inspection by VITA upon forty-eight (48) hours advance written notice. Any total dollar amounts or not-to-exceed limitations appearing in the SOW or Task Order shall be considered reasonably accurate estimates. All changes in the scope of Service must be described in a written modification to the SOW or Task Order signed by both parties, which may include an appropriate adjustment to the price, delivery dates or both. Either Party may issue a change request that will be subject to written approval of the other Party before it becomes part of this Contract. Any authorized Services beyond the scope of an SOW shall be performed at the rates set forth in the SOW, unless otherwise agreed by the Parties.

##### **C. Acceptance Criteria**

###### **1. For Primary Product**

Deliverables shall be deemed accepted when VITA or its Agent determines that they meet the Requirements or written criteria ("Acceptance Criteria") set forth in Exhibit C. VITA or its Agent agrees to complete Acceptance testing (within sixty (60) calendar days in year one and ninety (90) calendar days in subsequent years) after receipt of the Deliverable ("Acceptance Testing Period") for all specified Primary Product Deliverables except the Final Primary Product, as defined in Exhibit C. VITA agrees to complete Acceptance testing of the Final Primary Product within fifteen (15) business days following delivery receipt of such Final Primary Product by VITA, VGIN, or its Agent.

###### **2. For Secondary Product**

Deliverables shall be deemed accepted when VITA or its Agent determines that they meet the Requirements or written criteria ("Acceptance Criteria") set forth in the Exhibit C. VITA or its Agent agrees to complete Acceptance testing within ninety (90) calendar days after receipt of the Deliverable ("Acceptance Testing Period") for all specified Secondary Product Deliverables.

### **3. For Task Orders**

Deliverables shall be deemed accepted when the ordering Authorized User or its Agent determines that they meet the Requirements or written criteria ("Acceptance Criteria") set forth in the applicable Task Order. Authorized User or its Agent agrees to complete Acceptance testing within ninety (90) calendar days after receipt of the Deliverable ("Acceptance Testing Period") for all specified Task Order Deliverables. Task order delivery schedules shall be mutually agreed to in writing.

Supplier agrees to provide to any Authorized User such assistance and advice as the Authorized User may reasonably require, at no additional cost, during such Acceptance testing. If an Authorized User deems a Deliverable not acceptable, such Authorized User shall provide notice to the Supplier identifying which specific portion(s) of the Deliverable(s) is non-conforming and describing the non-conformity.

#### **D. Cure Period**

Supplier shall correct the non-conformities identified hereunder and shall thereafter re-submit such previously non-conforming Deliverables for inspection within thirty (30) calendar days of the appropriate Authorized User's notice of non-conformance, or as otherwise agreed between VITA and Supplier. In the event that Supplier fails to deliver a Service or Deliverable which meets the Requirements, VITA may, in its sole discretion: (i) reject the Service or Deliverable in its entirety and recover amounts previously paid hereunder; (ii) issue a "partial Acceptance" of the Service or Deliverable with an equitable adjustment in the price to account for such deficiency; or (iii) conditionally accept the applicable Service or Deliverable while reserving its right to revoke Acceptance if timely correction is not forthcoming. Notwithstanding the foregoing, VITA shall be entitled to pursue any other remedies that are available to it under this Contract.

#### **E. Re-flight**

For any re-flights necessary for FY 2006, the areas shall be re-flown, processed and delivered to VITA within 12 months of the re-flight. For any re-flights necessary for FY 2007, the areas will be re-flown, processed and delivered by June 30, 2008.

#### **F. Documentation**

Any basic documentation not required by Exhibit A shall be ordered by means of issuance of a task Order.

#### **G. Aviation Laws, Regulations, and Procedures**

Supplier shall comply with all federal, state, and local aviation laws, regulations, and ordinances, including those issued by the Federal Aviation Administration (FAA). If Supplier's performance of Services requires it to fly aircraft in international airspace, Supplier shall comply with all relevant international laws, regulations, and protocol. Supplier shall ensure that, in performing the Services, it does not violate Department of Defense (DoD) rules restricting flights over Military Operations Areas (MOAs). Supplier shall review and perform all Services in accordance with all current Notices to Airmen (NOTAMs).

Prior to each flyover, Supplier shall file a flight plan with the relevant Air Traffic Controller(s) and shall secure all necessary permissions.

Supplier shall ensure that aircraft used to perform Services under this Contract are airworthy and properly maintained and overhauled by licensed and qualified agents or personnel. All replacement parts shall be properly tagged or certified. Supplier shall perform all applicable maintenance directives from relevant regulatory authorities and manufacturers.

#### **H. Import/Export**

Any product generated from any data collected, developed, analyzed, or otherwise used or obtained by Supplier pursuant to Supplier's performance of this Contract shall be considered Work Product.

Supplier shall not export or re-export any data collected, developed, analyzed, or otherwise used or obtained by Supplier pursuant to Supplier's performance of this Contract, or any Work Product, to any country, person, entity or end user subject to U.S. export restrictions. Supplier specifically agrees not to export, re-export, or download such data or Work Product: (a) to any

country to which the U.S. has embargoed or restricted the export of goods or services, which currently include, but are not necessarily limited to Cuba, Iran, Iraq, Libya, North Korea, Sudan, Syria, Federal Republic of Yugoslavia, or to any national of any such country; (b) to any end-user who Supplier knows or has reason to know will utilize the data or Work Product or portion thereof in the design, development or production of nuclear, chemical, or biological weapons, or for any purpose which may, directly or indirectly, pose a security threat to the United States or its territories; or (c) to any end-user who has been prohibited from participating in U.S. export transactions by any federal agency of the U.S. government. Supplier is responsible for complying with local laws in Supplier's jurisdiction, as well as all federal and state laws and regulations regarding import and export, which might impact its right to import, export, or use the data or Work Product.

In addition, VITA requires that all product and materials related to any portion of the project land area within the extent of areas that are deemed "restricted" or "sensitive" by either federal or state authorities, must only be processed by persons or entities working within the boundaries of the United States. On 3/16/2006 VITA provided Supplier with a file depicting all "sensitive or "restricted" areas within Virginia.

## 5. LIQUIDATED DAMAGES

Table 1 sets forth the milestone schedule by which Supplier shall deliver to VITA the Final Primary Product. Task orders are not subject to this clause.

Table 1

<b>Milestone Number</b>	<b>Date</b>	<b>% of data delivered by month</b>	<b>% of data delivered (cumulative)</b>
1	September 30	10	10
2	October 31	10	20
3	November 30	20	40
4	<b>December 31</b>	<b>20</b>	<b>60</b>
5	<b>January 31</b>	<b>20</b>	<b>80</b>
6	<b>February 28</b>	<b>20</b>	<b>100</b>

Supplier understands and agrees that it is critical to VITA that data be provided on or before the dates specified in Table 1. Should Supplier fail to deliver the cumulative percentages of data by the milestone dates 4, 5, and 6, as specified in Table 1, VITA shall deduct, not as a penalty but as liquidated damages, a charge of \$3,000 for each and every calendar day of delay beyond the date specified until Supplier has delivered the required cumulative percentage.

Data that is not accepted by VITA shall be returned to Supplier for correction. Supplier shall correct the data in accordance with the Cure Period. If Supplier fails to correct the non-conformity in accordance with the Cure Period, in addition to the remedies provided in the Cure Period section of this Contract, VITA shall consider, for purposes of the milestone dates, such not accepted data not delivered and shall adjust the percentage of data delivered accordingly. If such adjustment causes the cumulative percentage of data delivered to fall below the percentage required by milestone dates 4, 5, and 6 in Table 1, liquidated damages shall be immediately applied.

In no event shall liquidated damages exceed ten percent (10%) of the value of the total price of all Deliverables subject to liquidated damages.

Notwithstanding the foregoing, Supplier shall not be responsible for any delay to the extent that performance or delivery is delayed by any act, negligence or default on the part of the Commonwealth; an act of the public enemy, war, terrorism, embargo, fire, natural disaster, explosion not caused by the Supplier or its supplier(s), riot, sabotage, labor trouble that results from a cause or causes entirely beyond the control of the Supplier or its supplier(s), government regulation, Act of



God, or any other cause or causes beyond the control of the Supplier or its supplier(s); provided, however, that Supplier shall notify VITA via phone or email within twenty-four (24) hours of such event resulting in such delay of performance or delivery.

An extension may be available only if the Supplier has notified VITA in writing via phone or email within forty eight (48) hours after any occurrence justifying the extension. Supplier's notification shall include a description of the solution it plans to implement to resolve or mitigate the circumstances resulting in its request for an extension. Upon receipt of such notification and justification from the Supplier, a reasonable extension of time for provision of Deliverables specified herein may be granted. By signing this Contract, Supplier certifies its concurrence that the liquidated damage amount specified is reasonable in light of the harm that is anticipated from late performance or delivery and the difficulty of proof of loss, and the Supplier hereby waives any claim that such liquidated damages are void as penalties or not reasonably related to actual damages.

The liquidated damages apply only to delivery of required products for areas that are covered by imagery data captured by the Supplier in the Spring of 2006, or succeeding years, meeting project acquisition specifications.

Liquidated damages will not be assessed if:

- i). the total cumulative delivery of products to VITA by December 31 (year of acquisition) equals sixty percent (60%) or greater of the total products subject to liquidated damages, and while not exceeding delivery of more than twenty percent (20%) of the total product in December (year of acquisition).
- ii). the total cumulative delivery of products to VGIN by January 31 (year immediately following the acquisition) equals eighty percent (80%) of the total products subject to liquidated damages
- iii). all products subject to liquidated damages are delivered on or before February 28 (year immediately following year of acquisition).

Notwithstanding the foregoing, liquidated damages shall be assessed if (i) submitted product has been rejected by VITA review, (ii) Supplier or its agent have been provided thirty (30) days (from the notification of non-acceptance) to correct the non-conformities, and (iii) Supplier fails to correct the problem during the Cure Period. In such circumstances, Supplier shall be assessed liquidated damages for every day over the thirty (30) day Cure Period in which product is not corrected.

## **6. RIGHTS TO WORK PRODUCT**

### **A. Work Product**

VITA and Supplier each acknowledge that performance of this Contract may result in Work Product. The Parties agree to document all Work Product specifications and make such specifications an incorporated Exhibit to this Contract. Supplier agrees that it shall promptly and fully disclose to VITA any and all Work Product generated, conceived, reduced to practice or learned by Supplier or any of its employees, either solely or jointly with others, during the term of this Contract, which in any way relates to the business of VITA or any Authorized User. Supplier further agrees that neither Supplier or Supplier's employees, nor any party claiming through Supplier or Supplier's employees, shall, other than in the performance of this Contract, make use of or disclose to others any proprietary information relating to the Work Product.

During performance of this Contract, or after termination or expiration hereof, the parties may from time-to-time meet to discuss a license from VITA for Supplier to use the data sets and other information and data encompassed within the Deliverables. VITA may decline to provide such a license to the Supplier for any reason.

### **B. Ownership**

Supplier agrees that, whether or not the Services are considered "works made for hire" or an employment to invent, all Work Product discovered, created or developed under this Contract shall be and shall remain the sole and exclusive property of VITA and its assigns. Except as

specifically set forth in writing and signed by both VITA and Supplier, Supplier agrees that VITA shall have all rights with respect to any Work Product discovered, created or developed under this Contract without regard to the origin of the Work Product.

If and to the extent that Supplier may, under applicable law, be entitled to claim any ownership interest in the Work Product, Supplier hereby transfers, grants, conveys, assigns and relinquishes exclusively to VITA any and all right, title and interest it now has or may hereafter acquire in and to the Work Product under patent, copyright, trade secret and trademark law in perpetuity or for the longest period otherwise permitted by law. If any moral rights are created, Supplier waives such rights in the Work Product. Supplier further agrees as to the Work Product to provide reasonable assistance to VITA to obtain and, from time to time, enforce patents, copyrights, trade secrets and other rights and protection relating to Work Product, and to that end, Supplier and its employees shall execute all documents for use in applying for and obtaining such patents, copyrights, trade secrets and other rights and protection with respect to such Work Product, as VITA may reasonably request, together with any assignments thereof to VITA or persons designated by it. Supplier's and its employees' obligations to assist VITA in obtaining and enforcing such rights shall continue beyond the termination of this Contract.

The Supplier hereby agrees that, notwithstanding anything else in this Contract, in the event of any breach of this Contract by VITA, the Supplier's remedy shall not include any right to rescind, otherwise revoke, or invalidate the provisions of this Section. Similarly, no termination of the Contract by VITA shall have the effect of rescinding the provisions of this Section.

**C. Pre existing Rights**

If and to the extent that any preexisting rights are embodied or reflected in the Work Product, Supplier hereby grants to VITA the irrevocable, perpetual, non-exclusive, worldwide, royalty-free right and license to (i) use, execute, reproduce, display, perform, distribute copies of and prepare derivative works based upon such preexisting rights and any derivative works thereof and (ii) authorize others to do any or all of the foregoing. Notwithstanding the foregoing, nothing herein shall grant VITA or any Authorized User rights to software programs that Supplier has the right to use through licensing but which licensing prohibits the distribution or sublicensing to any third party. None of the deliverables provided under this Contract will require proprietary software.

**D. Return of Materials**

Upon termination of this Contract, Supplier shall immediately return to VITA all copies, in whatever form, of any and all Confidential Information, Work Product and other properties provided by VITA, which are in Supplier's possession, custody or control.

**7. SUPPLIER PERSONNEL**

**A. Selection and Management of Supplier Personnel**

Supplier shall take such steps as may be necessary to ensure that all Supplier personnel provided under this Contract are competent and knowledgeable of the contractual arrangements and the SOW or applicable Task Order between VITA or Authorized User and Supplier. Supplier shall be solely responsible for the conduct of its employees and subcontractors and shall ensure that such employees and subcontractors comply with the appropriate Authorized User's site security, information security and personnel conduct rules, as well as applicable federal, state and local laws. VITA reserves the right to require the immediate removal from such Authorized User's premises of any employee, subcontractor or agent of Supplier whom such Authorized User believes has failed to comply or whose conduct or behavior is unacceptable or unprofessional or results in a security or safety breach.

**B. Supplier Personnel Supervision**

Supplier and VITA acknowledge that Supplier shall be and is the sole employer of Supplier personnel, and shall have sole responsibility to supervise, counsel, discipline, review, evaluate, set the pay rates of and terminate the employment of Supplier personnel.

## **8. REPRESENTATIONS AND WARRANTY OF SUPPLIER**

With respect to the Services provided by Supplier, Supplier represents and warrants the following:

### **A. Ownership**

Supplier has the right to provide the Services, including Deliverables, without violating or infringing any law, rule, regulation, copyright, patent, trade secret or other proprietary right of any third party.

### **B. Performance**

- i). All Services shall be performed with care, skill and diligence, consistent with or above applicable professional standards currently recognized in its profession, and Supplier shall be responsible for the professional quality, technical accuracy, completeness and coordination of all plans, information, specifications, computer programs, software, Deliverables and Services furnished under this Contract;
- ii). The Services and Deliverables are pursuant to a particular Request for Proposal, therefore, such Services and Deliverables shall be fit for the particular purposes specified by VITA and identified in Exhibit A, Statement of Work. Supplier is possessed of superior knowledge with respect to the Services and is aware that VITA is relying on Supplier's skill and judgment in providing the Services;
- iii). The Services shall meet or exceed the Requirements; and
- iv). The Services shall be performed in a professional manner.

### **C. Limited Warranty Period and Remedy**

All Deliverables are guaranteed during the Warranty Period following delivery of Deliverables to the Authorized User. Any Deliverable found to be non conforming to exhibit C (Acceptance Criteria), within the Warranty Period, as defined herein, will be corrected or replaced.

### **D. Supplier's Viability**

Supplier warrants that it has the financial capacity to perform and continue to perform its obligations under this Contract; that Supplier has no constructive or actual knowledge of a potential legal proceeding being brought against Supplier that could threaten performance of this Contract and that entering into this Contract is not prohibited by any contract, or order by any court of competent jurisdiction.

### **E. Supplier's Past Experience**

Supplier warrants that the Services of similar scope have been successfully performed for a non-related third party.

THE OBLIGATIONS OF SUPPLIER UNDER THIS SECTION ARE MATERIAL. SUPPLIER MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY CONCERNING MERCHANTABILITY OR FITNESS FOR ANY OTHER PARTICULAR PURPOSE.

## **9. ORDERS AND COMPENSATION**

### **A. Order**

Notwithstanding all Authorized User's rights to purchase or license, through VITA, Secondary Product options under this Contract, an Authorized User is under no obligation to purchase or license from Supplier any Secondary Product options. This Contract is non-exclusive and all Authorized Users may, at their sole discretion, purchase, license or otherwise receive benefits from third party suppliers of products and services similar to, or in competition with, the Secondary Product options offered by Supplier.

Supplier is required to accept orders (within the parameters of this contract) placed through the eVA electronic procurement website portal (<http://www.eva.state.va.us>) that meets the Secondary Product criteria as specified in this Contract and supporting documents. eVA is the

Commonwealth of Virginia's total electronic procurement solution. State agencies, as defined in §2.2-2006 of the Code of Virginia, shall order through eVA.

This ordering authority is limited to issuing orders for the Services available under this Contract. All orders of local government options shall be evidenced by Task Orders, executed by both parties thereto. The terms of delivery and performance of all Task Orders shall be negotiated by the parties. Supplier shall not be required to perform work for other Authorized Users for which funds have not been obligated. Under no circumstances shall any Authorized User have the authority to modify this Contract.

**B. Purchase Price and Price Protection**

Exhibit B sets forth the agreed upon fees and charges. The fees and charges shall be applicable throughout the duration of the term of this Contract. Subject to the mutual written agreement of both Parties, prices may be adjusted during the subsequent one-year extensions, provided however, that no such adjustment shall be an increase exceeding the lesser of 3% or the annual increase in the Consumer Price Index for All Urban Consumers (CPI-U), U.S. City Average, All Items, Not Seasonally Adjusted as published by the Bureau of Labor Statistics of the Department of Labor (<http://www.bls.gov/cpi/home.htm>), for the effective date of the increase compared with the same index one (1) year prior. Any such change in price shall be submitted to all Authorized Users in writing in accordance with the above and shall not become effective for sixty (60) days thereafter. Supplier agrees to offer price reductions to ensure compliance with the Competitive Pricing Section.

**C. Invoice and Payment Terms**

All payment obligations under this Contract are subject to the availability of state, federal, or local government legislative appropriations for this purpose. In the event of non-appropriation of funds for the items under this Contract, VITA may terminate this Contract, the Statement of Work, or any Task Order issued hereunder for those goods or services for which funds have not been appropriated. Written notice will be provided to the Supplier as soon as possible after legislative action is completed.

Supplier is responsible for the accuracy of its billing information.

If there are any disputed items, the appropriate Authorized User shall pay all undisputed charges and promptly notify Supplier in writing of any disputed amount. Supplier shall thereupon review its records, and, if it does not concur with such Authorized User, provide such Authorized User with documentation to support the charge.

**D. Invoice Procedures for Primary Product**

Supplier shall submit invoices to VITA in accordance with the milestone payment schedule set forth below. Invoiced Deliverables may reflect partial completion of a Phase. Except for Final Primary Product, payment will be made to Supplier by VITA within thirty (30) days of receipt of each invoice, and payment will not be subject to product review and approval by VITA. However, delivered interim product found to be unacceptable during Acceptance Testing and not corrected during the Cure Period will be credited against the next Supplier invoice, until corrected. Payment for Final Primary Product shall not be made until thirty (30) days after Acceptance.

The milestone payment schedule is as follows:

Milestone	Percentage of Primary Product Price (prior to retainage)
Project planning and setup	2%
Imagery collection phase of the Contract Services. Invoices will be submitted monthly based on the percentage of area of the Commonwealth successfully collected, as evidenced by submittal of a detailed	30%

monthly data acquisition report specifying the amount of acceptable airborne data obtained and quality assured in a given month,, which are certified by Supplier to be of sufficient quality and clarity to support the digital orthoimagery development for the project. The final certification and true-up will occur at the post flight meeting.	
Control phase. Invoices will be submitted monthly based on the percentage completion of control as evidenced by submission of the individual sub production control reports. These reports may be preliminary if adjacent network ties have not yet been performed. Final certification will be based on acceptance of the final control report.	8%
Aerial Triangulation, Invoices will be submitted based on delivery of individual aerial triangulation reports.	10%
Digital Terrain Model and Digital Orthoimage rectification phase. Invoices will be submitted monthly based on the percentage completion as evidenced by submission of digital orthoimagery tiles and accompanying Digital Terrain Model tiles. (These deliverables can be submitted and payments made in incremental stages over the term of the contract based on a negotiated delivery schedule.)	30%
County Digital Orthoimagery phase. Invoices will be submitted monthly based on the percentage completion of County Digital Orthoimagery as evidenced by delivery of the individual County Digital Orthoimagery data sets of the digital orthoimagery, DTM tiles, and ancillary data, including all resolutions of digital orthoimagery involved, for an individual County or City. [The amount per tile will be based on the fee per tile in accordance with Attachment B (Fees and Pricing) (These deliverables can be submitted and payments made in incremental stages over the term of the contract based on a negotiated delivery schedule.)	20%
<b>TOTAL</b>	<b>100%</b>

Supplier's invoices shall show retainage of ten (10%) for Services and Deliverables. Following Acceptance of each jurisdiction Deliverables, Supplier shall submit a final invoice to VITA, for the total amount retained by VITA.

No invoice shall include any costs other than those identified in Exhibit B. Without limiting the foregoing, all shipping costs are the Supplier's responsibility except to the extent such charges are identified in Exhibit B. Invoices issued by the Supplier shall identify at a minimum:

- i). Service type and description
- ii). Quantity, charge and extended pricing for each Service item
- iii). This Contract number
- iv). Supplier's Federal Employer Identification Number (EIN).



**E. Invoice Procedures for Secondary Product**

Supplier shall remit each invoice to VITA upon delivery of Secondary Product to VITA. Payment to Supplier shall be due thirty (30) days after Acceptance of Secondary Product. Supplier's invoice shall include the same information as requested for Primary Product.

**F. Invoice Procedures for Task Orders**

Supplier shall remit each invoice to the "bill to" address provided with the Task Order promptly after all Deliverables have been accepted, unless otherwise negotiated with the consent of both parties. No invoice shall include any costs other than those identified in Exhibit B or the executed Task Order referencing this Contract. Without limiting the foregoing, all shipping costs are the Supplier's responsibility except to the extent such charges are identified in Exhibit B, or as noted in any executed Task Order referencing this Contract. Invoices issued by the Supplier shall identify at a minimum:

- v). Service type and description
- vi). Quantity, charge and extended pricing for each Service item
- vii). Applicable Task Order date
- viii). This Contract number and the applicable order number
- ix). Supplier's Federal Employer Identification Number (EIN).

Payment terms are net thirty (30) days from Acceptance and receipt of a valid invoice.

ALL CONTRACTUAL OBLIGATIONS UNDER THIS CONTRACT IN CONNECTION WITH AN ORDER PLACED BY ANY PUBLIC BODY (as that term is defined in §2.2-4301 of the Code of Virginia) OF ANY COUNTY, CITY OR TOWN LOCATED WITHIN THE COMMONWEALTH OF VIRGINIA ARE THE SOLE OBLIGATION OF THE COUNTY CITY OR TOWN PLACING THE ORDER AND NOT THE RESPONSIBILITY OF VITA.

**G. Interest**

Interest shall accrue on all invoices that are not timely paid in accordance with §2.2-4355 of the Code of Virginia. In addition, the terms of §§ 2.2-4354 and 2.2-4363 are incorporated herein and shall apply to invoicing.

**10. COMPETITIVE PRICING**

Supplier warrants and agrees that each of the charges, economic or product terms or warranties granted to VITA pursuant to this Contract are comparable to or better than the equivalent charge, economic or product term or warranty being offered to any commercial or government customer of Supplier. If Supplier enters into any arrangements with another customer of Supplier or with an Authorized User to provide Services under more favorable prices, as the prices may be indicated on Supplier's current U.S. and International price list or comparable document, then this Contract shall be deemed amended as of the date of such other arrangements to incorporate those more favorable prices, and Supplier shall immediately notify VITA of such change.

**11. CONFIDENTIALITY**

**A. Treatment and Protection**

Each Party agrees to (i) hold in strict confidence all Confidential Information of the other Party, (ii) use the Confidential Information solely to perform or to exercise its rights under this Contract, and (iii) not transfer, display, convey or otherwise disclose or make available all or any part of such Confidential Information to any third-party. However, an Authorized User may disclose the Confidential Information as delivered by Supplier to subcontractors, contractors or agents of such Authorized User that are bound by a non-disclosure contract with such Authorized User. Each Party shall take the same measures to protect against the disclosure or use of the Confidential Information as it takes to protect its own proprietary or confidential information (but in no event shall such measures be less than reasonable care).

## **B. Exclusions**

The term "Confidential Information" shall not include information that is:

- i). in the public domain through no fault of the receiving Party or of any other person or entity that is similarly contractually or otherwise obligated;
- ii). obtained independently from a third-party without an obligation of confidentiality to the disclosing Party and without breach of this Contract;
- iii). independently developed by the receiving Party without reference to the Confidential Information of the other Party; or
- iv). required to be disclosed under The Virginia Freedom of Information Act (§§2.2-3700 et seq. of the Code of Virginia) or similar laws or pursuant to a court order.

## **C. Return or Destruction**

Upon the termination or expiration of this Contract or upon the earlier request of the disclosing Party, the receiving Party shall (i) at its own expense, (a) promptly return to the disclosing Party all tangible Confidential Information (and all copies thereof except the record required by law) of the disclosing Party, or (b) upon written request from the disclosing Party, destroy such Confidential Information and provide the disclosing Party with written certification of such destruction, and (ii) cease all further use of the other Party's Confidential Information, whether in tangible or intangible form.

## **12. LIABILITY AND INDEMNIFICATION**

Supplier agrees to indemnify, defend and hold harmless any Authorized User, its officers, directors, agents and employees ("Authorized User's Indemnified Parties") from and against any and all third party claims, demands, proceedings, suits and actions, including any related liabilities, obligations, losses, damages, fines, judgments, settlements, expenses (including attorneys' and accountants' fees and disbursements) and costs (each, a "Claim" and collectively, "Claims"), incurred by, borne by or asserted against any of Authorized User's Indemnified Parties to the extent such Claims in any way relate to, arise out of or result from: (i) any intentional or willful conduct or negligence of any employee or subcontractor of Supplier, (ii) breach of any representation, warranty or covenant of Supplier contained herein, (iii) any uncorrected defect in the Services or Deliverables, or (iv) any actual or alleged infringement or misappropriation of any third party's intellectual property rights by any of the Services or Deliverables. Selection and approval of counsel and approval of any settlement shall be accomplished in accordance with all applicable laws, rules and regulations. For state agencies the applicable laws include §§ 2.2-510 and 2.2-514 of the Code of Virginia. In all cases the selection and approval of counsel and approval of any settlement shall be satisfactory to the Authorized User against whom the claim has been asserted.

In the event of a Claim pursuant to any actual or alleged infringement or misappropriation of any third party's intellectual property rights by any of the Services or Deliverables, and in addition to all other obligations of Supplier in this Section, Supplier shall at its expense, either (a) procure for all Authorized Users the right to continue use of such infringing Services or Deliverables, or any component thereof; or (b) replace or modify such infringing Services or Deliverables, or any component thereof, with non-infringing products or services satisfactory to VITA. If Supplier cannot accomplish any of the foregoing within a reasonable time and at commercially reasonable rates, then Supplier shall accept the return of the infringing component of the Services or Deliverables, along with any other components of any products rendered unusable by any Authorized User as a result of the infringing component, and refund the price paid to Supplier for such components.

**EXCEPT WITH REGARD TO CLAIMS FOR PROPERTY DAMAGE, PERSONAL INJURY OR INFRINGEMENT, AND THE INDEMNIFICATION AND CONFIDENTIALITY OBLIGATIONS, WITH RESPECT TO EACH OF WHICH LIABILITY SHALL NOT BE LIMITED PURSUANT TO THIS SECTION, IN NO EVENT WILL EITHER PARTY BE LIABLE TO THE OTHER PARTY (OR THE INDEMNIFIED PARTIES OF SUCH PARTY) FOR ANY INDIRECT, INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES, INCLUDING (WITHOUT LIMITATION) LOSS OF PROFIT, INCOME OR SAVINGS, EVEN IF ADVISED OF THE POSSIBILITY THEREOF, EXCEPT WHEN SUCH DAMAGES**

**ARE CAUSED BY THE GROSS NEGLIGENCE OR WILLFUL MISCONDUCT OF THE PARTY, ITS EMPLOYEES, AGENTS OR SUBCONTRACTORS.**

### **13. LICENSES, REGISTRATIONS, AND CERTIFICATES**

#### **A. Corporate**

At all times during the data collection period of the Contract, Supplier shall maintain a current commercial aviation license. Upon VITA's request, the Supplier shall provide a current copy of its Federal Aviation Regulation Certificate, Part 91.

#### **B. Personnel**

Upon request, Supplier shall provide to VITA copies of the following with respect to the pilots performing Services under this Contract: (i) commercial pilot certificate, (ii) FAA certification, and (iii) aircraft logs.

Upon request, Supplier shall provide to VITA copies of the A&P licenses of the mechanics who service the aircraft to be used in performing Services prior to the performance of such Services, or shall provide a copy of the certification of Supplier's repair station.

#### **C. Aircraft**

Upon request, Supplier shall provide to VITA the following with respect to such aircraft: (i) Type Certificate Data Sheet (TCDS), (ii) FAA aircraft registration, and (iii) airworthiness certificate.

### **14. INSURANCE**

In addition to the insurance requirements referenced in the Incorporated Contractual Provisions section of this Contract, Supplier shall maintain aviation liability insurance with an "A" rated insurance carrier covering the aircraft to be used in performing the Services with a \$10,000,000 limit liability for each event, to include coverage for passengers and third parties on the surface. The Commonwealth of Virginia must be named as an additional insured and so endorsed on the policy. Supplier shall notify VITA immediately if its insurance coverages are modified or terminated.

### **15. SECURITY COMPLIANCE**

Supplier agrees to comply with all provisions of VITA's then current security procedures as are pertinent to Supplier's operation and have been supplied to Supplier by VITA and further agrees to comply with all applicable federal, state and local laws. Supplier shall indemnify, defend, and hold VITA, its officers, directors, employees and agents harmless from and against any and all fines, penalties (whether criminal or civil), judgments, damages and assessments, including reasonable expenses suffered by, accrued against, or charged to or recoverable from VITA, its officers, directors, agents or employees, on account of the failure of Supplier to perform its obligations pursuant this Section.

### **16. BANKRUPTCY**

If Supplier becomes insolvent, takes any step leading to its cessation as a going concern, fails to pay its debts as they become due, or ceases business operations continuously for longer than fifteen (15) business days, then VITA may immediately terminate this Contract on notice to Supplier unless Supplier immediately gives VITA adequate assurance of the future performance of this Contract. If bankruptcy proceedings are commenced with respect to Supplier, and if this Contract has not otherwise terminated, then VITA may suspend all further performance of this Contract until Supplier assumes this Contract and provides adequate assurance of performance thereof or rejects this Contract pursuant to Section 365 of the Bankruptcy Code or any similar or successor provision, it being agreed by the Parties that this is an executory contract. Any such suspension of further performance by VITA pending Supplier's assumption or rejection shall not be a breach of this Contract, and shall not affect VITA's right to pursue or enforce any of its rights under this Contract or otherwise.

## **17. PERFORMANCE AND PAYMENT BONDS**

The Supplier shall deliver to the VITA's Supply Chain Management Division a fully executed Commonwealth of Virginia Standard Performance and Payment Bond in the sum of \$2million for FY2006. Another fully executed bond amount will be agreed to by March 31 of each subsequent year, for the work anticipated for that year. In each case, the Commonwealth of Virginia will be named as obligee. The surety shall be a surety company or companies approved by the State Corporation Commission to transact business in the Commonwealth of Virginia. No payment shall be due and payable to the Supplier, even if the Contract has been performed in whole or in part, until the bonds have been delivered to and approved by VITA. Standard bond forms will be provided by VITA's Supply Chain Management Division prior to or at the time of award.

## **18. GENERAL PROVISIONS**

### **A. Relationship Between VITA and Supplier**

Supplier has no authority to contract for VITA or in any way to bind, to commit VITA to any agreement of any kind, or to assume any liabilities of any nature in the name of or on behalf of VITA. Under no circumstances shall Supplier, or any of its employees, hold itself out as or be considered an agent or an employee of VITA, and VITA shall have no duty to provide or maintain any insurance or other employee benefits on behalf of Supplier or its employees. Supplier represents and warrants that it is an independent contractor for purposes of federal, state and local employment taxes and agrees that VITA is not responsible to collect or withhold any federal, state or local employment taxes, including, but not limited to, income tax withholding and social security contributions, for Supplier. Any and all taxes, interest or penalties, including, but not limited to, any federal, state or local withholding or employment taxes, imposed, assessed or levied as a result of this Contract shall be paid or withheld by Supplier or, if assessed against and paid by VITA, shall be reimbursed by Supplier upon demand by VITA.

### **B. Incorporated Contractual Provisions**

The contractual provisions at the following URL are statutorily mandated provisions that are hereby incorporated by reference:  
[http://www.vita.virginia.gov/procurement/documents/terms\\_05-06sw.pdf](http://www.vita.virginia.gov/procurement/documents/terms_05-06sw.pdf) In addition, the contractual claims provision at §2.2-4363 of the Code of Virginia, as referenced in the Dispute Resolution section of this Contract, shall apply to this Contract.

### **C. Governing Law**

This Contract shall be governed by and construed in accordance with the laws of the Commonwealth of Virginia without regard to that body of law controlling choice of law. Any and all litigation shall be brought in the circuit courts of the Commonwealth of Virginia. The English language version of this Contract prevails when interpreting this Contract. The United Nations Convention on Contracts for the International Sale of Goods and all other laws and international treaties or conventions relating to the sale of goods are expressly disclaimed. UCITA shall apply to this Contract only to the extent required by §59.1-501.15 of the Code of Virginia.

### **D. Dispute Resolution**

In accordance with §2.2-4363 of the Code of Virginia, contractual claims, whether for money or other relief, shall be submitted in writing to the public body from whom the relief is sought no later than sixty (60) days after final payment; however, written notice of the Supplier's intention to file such claim must be given to VITA at the time of the occurrence or beginning of the work upon which the claim is based. Pendency of claims shall not delay payment of amounts agreed due in the final payment. VITA shall render a final decision in writing within thirty (30) days after its receipt of the Supplier's written claim.

The Supplier may not invoke any available administrative procedure under §2.2-4365 of the Code of Virginia nor institute legal action prior to receipt of the purchasing agency's decision on the claim, unless that agency fails to render its decision within thirty (30) days. The decision of the purchasing agency shall be final and conclusive unless the Supplier, within six (6) months of the date of the final decision on the claim, invokes appropriate action under §2.2-4364, Code of Virginia or the administrative procedure authorized by §2.2-4365, Code of Virginia.

Upon request from the public body from whom the relief is sought, Supplier agrees to submit any and all contractual disputes arising from this Contract to VITA's alternative dispute resolution (ADR) procedures. Supplier may invoke VITA's ADR procedures at any time and concurrently with any other statutory remedies prescribed by the Code of Virginia.

In the event of any breach by VITA, Supplier's remedies shall be limited to claims for damages and Prompt Payment Act interest and, if available and warranted, equitable relief, all such claims to be processed pursuant to this Section. In no event shall Supplier's remedies include the right to terminate any license or support services hereunder.

**E. Advertising and Use of Proprietary Marks**

Supplier shall not use any Authorized User's name or refer to any Authorized User, directly or indirectly, in any press release or formal advertisement without receiving prior written consent of such Authorized User. In no event may Supplier use a proprietary mark without receiving the prior written consent of the Authorized User.

**F. Notices**

Any notice required or permitted to be given under this Contract shall be in writing and shall be deemed to have been sufficiently given if delivered in person, or if deposited in the US mails, postage prepaid, for mailing by registered, certified mail, or overnight courier service addressed to the addresses shown on the signature page. Either Party may change its address for notice purposes by giving the other Party notice of such change in accordance with this Section.

**G. No Waiver**

Any failure to enforce any terms of this Contract shall not constitute a waiver.

**H. Assignment**

This Contract shall be binding upon and shall inure to the benefit of the permitted successors and assigns of each party hereto. Supplier may not assign, subcontract, delegate or otherwise convey this Contract, or any of its rights and obligations hereunder, to any entity without the prior written consent of VITA, and any such attempted assignment or subcontracting without consent shall be void. VITA may assign this Contract to any entity, so long as the assignee agrees in writing to be bound by the all the terms and conditions of this Contract.

If any law limits the right of the Parties to prohibit assignment or nonconsensual assignments, the effective date of the assignment shall be 30 days after the Supplier gives VITA prompt written notice of the assignment, signed by authorized representatives of both the Supplier and the assignee. Any payments made prior to receipt of such notification shall not be covered by this assignment.

**I. Captions**

The captions are for convenience and in no way define, limit or enlarge the scope of this Contract or any of its Sections.

**J. Severability**

Invalidity of any term of this Contract, in whole or in part, shall not affect the validity of any other term. The Parties further agree that in the event such provision is an essential part of this Contract, they shall immediately begin negotiations for a suitable replacement provision.

**K. Survival**

The provisions of this Contract regarding Rights To Work Products, Warranty, Confidentiality, Liability and Indemnification, and the General Provisions shall survive the expiration or termination of this Contract.

**L. Force Majeure**

Neither Party shall be responsible for failure to meet its obligations under this Contract if the failure arises from causes beyond the control and without the fault or negligence of the non-performing Party, including those circumstances described in Section 5, Liquidated Damages. If any performance date under this Contract is postponed or extended pursuant to this section for longer than thirty (30) calendar days, VITA, by written notice given during the postponement or



extension, may terminate Supplier's right to render further performance after the effective date of termination without liability for that termination.

**M. Remedies**

The remedies set forth in this Contract are intended to be cumulative. In addition to any specific remedy, VITA reserves any and all other remedies that may be available at law or in equity.

**N. Right to Audit**

VITA reserves the right, upon reasonable advance written notice to Supplier, to audit those Supplier records that relate to the Services rendered or the amounts due Supplier for such Services under this Contract. VITA's right to audit shall be limited as follows:

- i). Three (3) years from Service performance date;
- ii). Performed at Supplier's premises, during normal business hours at mutually agreed upon times; and
- iii). Excludes access to Supplier cost information.

**O. Offers of Employment**

During the first twelve (12) months of the Contract, Supplier shall not solicit to hire an employee of an Authorized User who has substantially worked on any project covered by this Contract without prior written consent of such Authorized User.

**P. Contract Administration**

Supplier agrees that at all times during the term of this Contract an account executive, at Supplier's senior management level, shall be assigned and available to VITA. Supplier reserves the right to change such account executive upon reasonable advance written notice to VITA.

**Q. Existing Imagery**

At its discretion, the Commonwealth may purchase existing tiles with existing 2006 leaf-off imagery, subject to acceptable pricing, technical specification, schedule for delivery, and ownership rights. Supplier shall not be subject to section 12 of this contract (Liability and Indemnification ) and section 5 (liquidated damages) for any purchases of existing EarthData imagery. Purchase of existing 2006 leaf-off imagery may or may not substitute for Supplier-collected imagery, and may or may not affect the total tile count for the project. The Commonwealth will determine whether existing imagery shall substitute for Supplier-collected imagery.

**R. Entire Contract**

The following Exhibits, including all subparts thereof, are attached to this Contract and are made a part of this Contract for all purposes:

Exhibit A Statement of Work

Exhibit B Fees and Pricing

Exhibit C Acceptance Criteria

Exhibit D Structures.xls

Request for Proposals document

This Contract, its Exhibits, and any prior non-disclosure agreement constitute the entire agreement between the Parties and supersedes any and all previous representations, understandings, discussions or agreements between VITA and Supplier as to the subject matter hereof. This Contract may only be amended by an instrument in writing signed by VITA and Supplier. In the event of a conflict, the following order of precedence shall apply: this Contract document, , Exhibit A, Exhibit C, Exhibit B, Exhibit D, Request for Proposal.

Supplier acknowledges that it has had the opportunity to review this Contract with its legal counsel.

Executed as of the last date set forth below by the undersigned authorized representatives of the Parties.

Supplier

By: 

(Signature)

Name: John R. Copple

(Print)

Title, Its: Chief Executive Officer

Date: 3/17/2006

Address for Notice:

Sanborn Map Company, Inc.

1935 Jamboree Drive Suite 100

Colorado Springs, CO 80920-5368

Attention: Mr. Craig McDaniel

VITA

By: 

(Signature)

Name: Cheryl Clark

(Print)

Title, Its: Deputy CIO

Date: 3/17/06

Address for Notice:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Attention: Contract Administrator

**EXHIBIT A**  
**Statement of Work**

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**SCOPE STATEMENT:**

**Project Purpose:** Aerial data acquisition, ground control, aerotriangulation and development of statewide DTM and digital orthophotography data for the following ortho GSDs:

- A portion of the state at 1' GSD and a portion at 6" GSD

GSD	Ortho Scale	No. Tiles*	Sq. Miles	Line Miles	Models
1'	1"=200'	43,304	43,647	35,772	37,305
6"	1"=100'	18,529	4,282	6,975	12,085

**DTM Specification Options;**

- **Base Topo DTM:** The base topo DTM will meet the minimum requirement for both scales of the Virginia Base Mapping Program (VBMP) photography at orthoimagery resolutions of 1' or 6". This DTM product includes the minimum amount of mass points and breaklines necessary to support the horizontal accuracy of the digital orthophotography.
- **Contour DTM - (Optional Buy-up):** This option will utilize the Base Topo DTM, which will be further densified with additional mass points and breaklines to generate accurate contours at selected map scale. Breaklines captured along water features will be topologically structured and hydrologically corrected for a positive high-to-low stream flow. The contours delivered for this product (2' or 4' based on selected map scale) will meet both NSSDA vertical accuracy specifications and FEMA contour specifications.

**Product Description:**

**Base Product Options**

Base Products - Option 1

- 1' GSD color orthos w/Base Topo DTM suitable for generating orthophotography
- 6" GSD color orthos w/Base Topo DTM suitable for generating orthophotography
- Optional Buy-up to produce a contour DTM suitable for generation of contours

**Local Government Options**

Option 1

Upgrade from 1' GSD to 6" GSD w/supporting DTM

#### Option 2

Generation of contours that meet map accuracy standards produced as part of the VBMP.

#### Option 3

Planimetric structure outlines (within specified size) captured as a separate layer

#### Option 4

Option to contract for (a) contours (b) planimetrics for structures for up to three years following the 2006/2007 imagery acquisition (2008, 2009, 2010)

### **Project Phases**

- Phase I – This project phase covers work to be performed during FY06
- Phase II – This project phase covers work to be performed during FY07
- Phase III – This project phase covers work to be performed during FY08

### **Project Deliverables:**

<b>Deliverable A</b>	Project Work Plan
<b>Deliverable B</b>	Flight/Control Layout
<b>Deliverable C</b>	Aerial Data Acquisition Report (including set-up and orientation data)
<b>Deliverable D</b>	Ground Control Report
<b>Deliverable E</b>	Aerial Triangulation Report
<b>Deliverable F</b>	Panchromatic Stereo Pairs
<b>Deliverable G</b>	Statewide DTM (base topo)
<b>Deliverable H</b>	DTM Data (buy up option(s))
<b>Deliverable J</b>	Pilot Project Areas
<b>Deliverable J</b>	Statewide GeoTIFF digital imagery and DTM data cut to DVD
<b>Deliverable K</b>	Statewide GeoTIFF digital imagery and DTM data on hard drive
<b>Deliverable L</b>	Statewide MrSID digital imagery and DTM data on hard drive
<b>Deliverable M</b>	1 GeoTIFF of digital imagery cut to tiles by jurisdiction on DVD (140 jurisdictions)
<b>Deliverable N</b>	1 GeoTIFF of DTM data cut to tiles by jurisdiction on DVD (140 jurisdictions)
<b>Deliverable O</b>	3D Bridge Files (as separate layer)
<b>Deliverable P</b>	Ancillary Data (AT report, Ground Control Report, DTM) on DVD for 140

	jurisdictions
<b>Deliverable Q</b>	Metadata (FGDC compliant for all deliverables)
<b>Deliverable R</b>	Interim, phase and final project reports
<b>Known Exclusions</b>	None known at this time
<b>Accuracy Specifications</b>	All digital orthoimagery and development processes for the VBMP shall conform to the ASPRS Draft Aerial Photography Standards (1995) and Model Virginia Map Accuracy Standards (1992), which generally follow the ASPRS Accuracy Standard for Large-Scale Mapping (1990) for all imagery at the scales indicated except for the changes specified in this document. Accuracy will be tested and reported according to NSSDA Geospatial Positioning Accuracy Standards Part 3: National Standard for Spatial Data Accuracy.
<b>Quality Measures (criteria that will determine acceptability)</b>	<ul style="list-style-type: none"> <li>• Meet all schedule milestones</li> <li>• Client approval and acceptance of all deliverables for each project phase</li> </ul>
<b>Client Review and Acceptance</b>	In order to meet the production schedule it will be necessary that the VGIN product review period does not exceed 90 working days for the orthophoto deliveries and 15 working days for the jurisdiction deliveries. Contractor will in turn then have 30 calendar days to make any necessary corrections to data and return for final review and approval. The VGIN count of days begins upon VGIN receipt of data.



## AERIAL PHOTOGRAPHY

- **Aerial Photography**

**Project Area:**

The project encompasses the entire land area of the Commonwealth of Virginia. The State boundary is to be buffered by 1000'. Coastal areas of the State bordering the Atlantic Ocean or the Chesapeake Bay shall be buffered by 1000' or the extent of man-made features extending from shore.

GSD	Ortho Scale	No. Tiles*	Sq. Miles	Line Miles	Models
1'	1"=200'	43,304	43,647	35,772	37,305
6"	1"=100'	18,529	4,282	6,975	12,085

**Aerial Photography Specifications:** True color (24 bit) digital orthos at 1' and 6" GSDs, All flight lines will be flown in a cardinal N-S or E-W direction, except for cross flights and in certain mountainous areas where non-cardinal direction flight lines may be required to compensate for extreme changes in elevation.

**Horizontal Control:** The horizontal control adjustment will be in NAD 83/93 (HARN) reference datum

**Vertical Control:** The vertical control will be NAVD 88 reference datum maintained by the NGS

**Project Units:** US Survey Feet

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**Conversion:** 1 foot = 12/39.37 meter or 1 foot = 0.304 800 609 6012 meter

**Forward Overlap:** 60% +/- 3%

**Sidelap:** 30% +/- 3%

**Crab:** <3 degrees

**Tilt:** < 4 degree

**Acquisition Conditions:** Aerial acquisitions will be conducted during local leaf-off conditions during the spring of 2006 and subsequent years upon agreement and only on days when conditions are considered optimal for collection of imagery to be used in the production of the required orthoimages, notably:

- Sun angle is 30° or greater from the horizon
- Acquisition area is free of snow, smoke, haze, and fog
- Leaf-off conditions
- Streams are within their normal banks
- Conditions are considered nominally cloud free

If snow is present on the ground, we will direct our aircraft to other areas of the

project where conditions both on the ground and in the air are considered optimal.  
*Note the client will have the final say as to when to stop flying due to leaf conditions.*

**Airspace:** Contractor will be responsible for identifying any areas of restricted airspace that may impact the data acquisition and coordinating flights with the proper authorities and agencies. The client has provided shapefiles on 3/16/2006 of all DOD restricted areas.

**Film Labeling:** Time of day of exposure, Altimeter reading, Platen ID number, Camera ID number and lens focal length

**Contact Prints:** NA

**Diapositives:** NA

The commencement of the above project activity or work package is hereby authorized, to begin on March 18, 2006.

**Remarks or special issues to be addressed:**

**Acquisition Coordination:** Contractor will be responsible for coordinating the activities of all acquisition subcontractors, and will coordinate base station surveys and maintenance with the teams lead survey company. Note all flight crews will report acquisition progress status to the project manager on a daily basis, which will include electronic delivery of the flight log data for each mission within 24 hrs of collection.

**Project Tracking:**

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**Consistency:** Contractor will ensure that all aerial acquisition team members follow the same file naming conventions and reporting structure (format, content and frequency).

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## AEROTRIANGULATION

- **Aerotriangulation**

**Project Area:**

The project encompasses the entire land area of the Commonwealth of Virginia. The State boundary is to be buffered by 1000'. Coastal areas of the State bordering the Atlantic Ocean or the Chesapeake Bay shall be buffered by 1000' or the extent of man-made features extending from shore.

GSD	Ortho Scale	No. Tiles*	Sq. Miles	Line Miles	Models
1'	1"=200'	43,304	43,647	35,772	37,305
6"	1"=100'	18,529	4,282	6,975	12,085

**Hardware:**

**Software:**

**Process:**

**Fit to Control**

### Aerotriangulation Report

A final aerial triangulation report shall be compiled for the AT blocks and shall include the following information:

- Control and Flight Line Indexes (digital)
- Flight lines
- All control points and tie points appropriately labeled with station designations
  - All ground control points not used will be identified and reported to prior to their being rejected and not used in the AT solution for the block.
- Aerotriangulation Results
  - Accuracy of image observations  $\sigma_o \leq 5 \mu m$
  - RMSE in x and y at check points:  $\mu x$  and  $\mu y \cong 2.0$  to  $2.5 \sigma_o * s$ , where s is photo scale R F.
  - RMSE in height at check points:  $\mu z \cong 0.1'$  per 1000' of flying height is expected
  - $\mu x$  and  $\mu y < 5 \mu m$  as RMS residuals at the image points
  - RMSE theoretical accuracy (cm), all adjusted coordinates in x, y, z.
- Narrative:

**Horizontal control:** The horizontal control adjustment will be in NAD 83/93 (HARN) reference datum

**Vertical control:** The vertical control will be NAVD 88 reference datum maintained by the NGS

**General horizontal datum:** There are two State Plane Coordinates System (SPCS) zones in Virginia;

North and South.

**Project units:** US Survey Feet

**Conversion:** 1 foot = 12/39.37 meter or 1 foot = 0.304 800 609 6012 meter

**Product specifications:** Block AT results and final reports

**Deliverable items:**

Quantity	File Content	Media
1	Aerotriangulation Report per AT Block (digital reports)	DVD's
1	Aerotriangulation Results: <ul style="list-style-type: none"><li>Adjusted control points, pass points, and residuals in the NAD83/93 SPCS coordinate system with NAVD88 elevations</li><li>Standard deviation of the adjusted control point and pass point measurements</li><li>Camera focal length used in adjustment and Calibration Report.</li></ul>	DVD

## COMPILATION - BASE TOPO DTM

**Project name:** VGIN

**Prepared by:**

**Date:** February 2006

**Specific Activity or Work Package:**

- **Base Topo DTM:** Base topographic digital terrain model (DTM) will meet the minimum requirement for both scales of the Virginia Base Mapping photography at orthoimagery resolutions of 1' or 6". This DTM product includes the minimum amount of mass points and breaklines necessary to support the horizontal accuracy of the digital orthophotography. The mass points and breaklines generated for this DTM product will be accurately digitized in 3D, and will be on the ground, and will have a point spacing density sufficient for producing orthos at the specified GSD.

Note this DTM will not be of sufficient point density to generate accurate contours

<b>Resolution Orthoimage</b>	<b>NSSDA RMSEz</b>
1 foot GSD	1-1.2 foot
6 inch GSD	0.5-0.6 foot

**Stereopairs:** stereopairs, generated from the 1' and 6" GSD imagery will be utilized for compiling the minimal breaklines and mass points. .

**Project Area:** DTM data will be produced on a per AT block/per tile basis

**Horizontal control:** The horizontal control adjustment will be in NAD 83/93 (HARN) reference datum

**Vertical control:** The vertical control will be NAVD 88 reference datum maintained by the NGS

**Project units:** US Survey Feet

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**Conversion:** 1 foot = 12/39.37 meter or 1 foot = 0.304 800 609 6012 meter

**Deliverables:** ESRI shapefile coverage of all bridge polygons along with appropriate FGDC compliant Metadata

**Media:** All digital data deliverables will be written to DVD

**Additional Information:**

The commencement of the above project activity or work package is hereby authorized, to begin on:

**Remarks or special issues to be addressed:**

**Project tracking/reporting:** A weekly status report will be prepared by the project manager and



delivered to VGIN.

**Quality control:**

**Completion date:**

## COMPILATION - CONTOUR DTM

### Specific Activity or Work Package:

**Contour DTM:** This option will utilize the Base Topo DTM, which will be further densified with additional mass points and breaklines sufficient to generate accurate contours at the selected map scale. Breaklines captured along water features will be topologically structured and hydrologically corrected for a positive high-to-low stream flow. The contours delivered for this product (2' or 4' based on selected map scale) will meet both NSSDA vertical accuracy specifications and FEMA contour specifications. All hydrological features **SUCH** as streams, ponds, lakes, river banks, dam and associated structures, etc. data should be topologically corrected and structured and will be delivered in the contour DTM.

1.

Map Product	Ortho Resolution	Individual Mass Point & Breakline Points Vertical Accuracy RMSEz (NSSDA at 95%)	Overall Contour Vertical Accuracy z (NSSDA at 95%)	Contour Products To Be Generated
DTM suitable for orthorectification and includes contour generation	1'	1'-1.2'	2'-2.4'	Generation of 4' contours that will meet NSSDA and FEMA accuracy specification for 4' contour intervals
DTM suitable for orthorectification and includes contour generation	6"	0.5'-0.6'	1'-1.2'	Generation of 2' contours that will meet NSSDA and FEMA accuracy specification for 2' contours

**Stereopairs:** stereopairs, generated from the 1' and 6" GSD imagery will be utilized for compiling the breaklines and mass points.

**Project Area:** DTM data will be produced on a per AT block/per tile basis

**Horizontal control:** The horizontal control adjustment will be in NAD 83/93 (HARN) reference datum

**Vertical control:** The vertical control will be NAVD 88 reference datum maintained by the NGS

**Project units:** US Survey Feet

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**Conversion:** 1 foot = 12/39.37 meter or 1 foot = 0.304 800 609 6012 meter

**Deliverables:** ESRI shapefile coverage of all bridge polygons along with appropriate FGDC compliant Metadata

**Media:** All digital data deliverables will be written to DVD

**Additional Information:** This work authorization will be updated by the project manager as task orders for this specific service are received.

**The commencement of the above project activity or work package is hereby authorized, to begin on:** TBD

**Remarks or special issues to be addressed:**

**Project tracking/reporting:** A weekly status report will be prepared by the project manager and delivered to VGIN.

**Quality control:** Contractor established ISO9001/2000 documentation and procedures pertaining to this service will be adhered to by all contract personnel

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**Completion date:**

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## CONTOUR GENERATION

**Specific Activity or Work Package:** contour generation at either 2' or 4' contour intervals

**Terrain Surface:** The terrain surface that will be used to generate the contours for this service will be the "Hydro-enforced Contour DTM". All hydrological feature data should be topologically corrected and structured and will be delivered in the contour DTM.

**Project Area:** Contours will be generated on a task order/project area basis (county/city level)

**Horizontal control:** The horizontal control adjustment will be in NAD 83/93 (HARN) reference datum

**Vertical control:** The vertical control will be NAVD 88 reference datum maintained by the NGS

**Project units:** US Survey Feet

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**Conversion:** 1 foot = 12/39.37 meter or 1 foot = 0.304 800 609 6012 meter

**Contour Interval:**

Contour Products To Be Generated	Ortho Resolution	Individual Mass Point & Breakline Vertical Accuracy	Overall Contour Vertical Accuracy z (NSSDA at 95%)
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	<b>RMSEz</b>		
	<b>(NSSDA at 95%)</b>		
Generation of 4' contours that will meet NSSDA and FEMA accuracy specification for 4' contour intervals	1'	1'-1.2'	2'-2.4'
Generation of 2' contours that will meet NSSDA and FEMA accuracy specification for 2' contours	6"	0.5'-0.6'	1'-1.2'

**Deliverables:** ESRI shapefile coverage (levels: Index, Index Obscured, Intermediate, Intermediate Obscured), along with appropriate FGDC compliant Metadata

**Media:** All digital data deliverables will be written to DVD

**Additional Information:** This work authorization will be updated by the project manager as task orders for this specific service are received.

**The commencement of the above project activity or work package is hereby authorized, to begin on: TBD**

**Remarks or special issues to be addressed:**

**Project tracking/reporting:** A weekly status report will be prepared by the project manager and delivered to VGIN.

**Quality control:** Contractor established ISO9001/2000 documentation and procedures pertaining to this service will be adhered to by their all personnel

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**Completion date:** TBD

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## ORTHO

### Specific Activity or Work Package:

- **Orthoimagery**

Flight log:

Layouts:

Forward overlap:

Sidelap: 30%

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**Terrain surface:** Based on the option selected, there will be two different types, Base Topo DTM and/or Hydro-enforced Contour DTM surface data generated and used for development of digital orthoimagery.

**Horizontal control:** The horizontal control adjustment will be in NAD 83/93 (HARN) reference datum

**Vertical control:** The vertical control will be NAVD 88 reference datum maintained by the NGS

**General horizontal datum:** There are two State Plane Coordinates System (SPCS) zones in Virginia; North and South.

**Project units:** US Survey Feet

**Conversion:** 1 foot = 12/39.37 meter or 1 foot = 0.304 800 609 6012 meter

**Product specifications:** Each counted tile shall be of a single consistent resolution. In some cases there will be duplication of areas by tiles due to overlap between areas of different resolution. Overlap is required along the line separating the North and South SPCS zones. Each tile that overlaps into neighboring counties of different State Plane zones must be produced twice, once for the North Zone and once for the South Zone. If a full grid tile provides less than 1,000 feet for 1' GSD of orthoimagery overlap between the two zones, an additional full grid tile or tiles shall be processed to provide a minimum of 1,000 feet. If a full grid tile provides less than 500' for 6" GSD of orthoimagery overlap between the two zones, an additional full grid tile or tiles shall be processed to provide a minimum of 500 feet of overlap on each side of the State Plane boundary.

GSD	Ortho Scale	No. Tiles*	Comments
1'	1"=200'	43,304	
6"	1"=100'	18,825	

**Image radiometry:** The digital orthoimagery will be radiometrically correct and match seamlessly. The goal is to produce digital imagery of nominally consistent tone and contrast throughout the state, as well as within single images. There shall be no areas of an orthophoto where orthophoto process is incomplete due to incomplete data (i.e., lack of DEM data, image gaps, etc.)

**Image Rectification Algorithm:** Image rectification shall be carried out using either cubic

convolution or better algorithm

**Tile or sheet size:** Scale Nested Tiles

1 foot resolution 5,000' x 5,000'

6 inch resolution 2,500' x 2,500'

Tiles shall be aligned with the Virginia State Plane Coordinate System grid, using either the North or South zone depending on the county in the area of coverage by each orthoimage. Each 5,000 ft x 5,000 ft tile shall contain four nested 2,500 ft x 2,500 ft tiles (if required). The grid tiles to be used were developed using the Virginia State Plane Coordinate System, NAD83, using the origin point for the Virginia State Plane Coordinate system (0,0)

VGIN will provide a desired naming convention for all tiles. This naming convention is to be followed for all deliverable tiles.

**Image mosaicking:** Mosaicking shall be accomplished using both automated and interactive (manual) methods.

Frame mosaicking and feathering: Mosaicking will be used to create a seamless image of the entire project area and to minimize any visual edge lines of adjacent orthos due to tonal variations. The mosaicked edge line between adjacent orthos shall be chosen so as to minimize the obtrusiveness of the edge line itself. If feathering (a process used on the join between two adjacent orthos to help reduce the difference in tone and contrast between the adjacent orthos) is used along the edge line, it shall not result in any noticeable image degradation such as image blurring or double imagery. Edge mosaicking and feathering shall not affect the positional accuracy of the orthos

**Pilot Project Areas:** pilot projects consisting of 1 or 2 contiguous tiles will be generated, for both the 1' and 6" GSD orthos, in each of the following areas. The pilot tiles will be perpendicular to the acquisition flight:

- i) Pilots to be produced in the following main areas: Mountain, Piedmont and Coastal
- ii) There will be one urban pilot produced for both the 1' and 6" GSD imagery
- iii) Within each main area there will be four sub pilots produced: rural, water, forest, agricultural

Note the total number of pilot areas may be reduced should more than one land cover criteria appear in a given tile.

The main purpose of the pilot areas is to determine acceptable radiometry. Radiometry characteristics shall be determined jointly through consultations between the Contactor and VGIN. Once the optimal characteristics have been approved by VGIN, all other images shall be radiometrically balanced to have a similar overall appearance to the greatest extent possible based upon the terrain and ground cover.

**Ortho Geometric Accuracy:** The digital orthoimagery within each state plane coordinate zone shall be seamless. The imagery will be geometrically correct. The geometric accuracy as per NSSDA reporting standards at 95% confidence level is defined as:

Accuracy  $r = 1.73 \times \text{RMSE}_r$ , where  $\text{RMSE}_r$  is root mean square error in x and y coordinates at well defined check points. The limiting RMSE in x, y coordinates is 2' and 1' for 1"=200' scale and 1"=100' scale mapping, respectively, as per Virginia State Mapping standards. The RMSE errors are cumulative process errors including of ground surveys, map compilation and extraction of ground dimensions from the map.

The orthoimagery compilation of final image map, however, is all digital processing unlike a conventional paper map. The extraction of the ground dimensions shall be from the digital orthoimagery instead of paper map eliminating errors of extraction from paper map.

General appearance and characteristics of the ortho imagery shall conform to the specifications set forth in Attachment D: "VBMP 2006 Orthophotography Project, Acceptance Criteria for Associated Professional Services and Products".

Contractor shall ensure imagery is quality controlled at all stages and be free from distortions at bridges/interchanges, edge matched, and to the extent practical free from double image 'ghosting' effect at the mosaicking edges, and is sharp without blurring effect.

**File compression:** Statewide coverage of digital ortho imagery compressed in MrSID or JPG2000 format at 18:1 by tile

**Null pixels:** Null pixel will be assign a gray value of 255 or white color

**Pixel origin:** GeoTiff reference will be the upper left corner of the upper left-most pixel. World file reference will be the center of the pixel of the upper left-most pixel. World file coordinates will be expressed to at least 2 significant digits.

VGIN will provide a desired naming convention for all tiles. This naming convention is to be followed for all deliverable tiles.

**Deliverable items:**

Quantity	File Content	Media
1	Aerotriangulation Report per AT Block (hardcopy narrative and digital reports)	DVD's
1	Set of panchromatic SSK stereopairs per AT Block	DVD's
1	Digital Orthos – Statewide Coverage by Tile (GeoTIF) combined 6" & 1' GSD – with applicable FGDC compliant Metadata	External Hard Drives
1	Digital Orthos – Statewide Coverage by Tile (compressed by tile, MrSID 18:1 ratio) combined 6" and 1' GSD– with applicable FGDC compliant Metadata	External Hard Drive
1	Digital Orthos – 140 Individual County/City coverages by tile (GeoTIF) 6" or 1' GSD, or combination of both – with applicable FGDC compliant Metadata	DVD's
1	Digital Terrain Model (DTM) by Tile – Statewide Coverage – with applicable FGDC compliant Metadata	DVD's
1	Digital Terrain model (DTM) by Tile for each of 140 Individual County/City coverages – with applicable FGDC compliant Metadata	DVD's
1	Set of 3D Bridge Files Per County/City coverage – ESRI Shapefile format	CD

The commencement of the above project activity or work package is hereby authorized, to begin on:

**Remarks or special issues to be addressed:**

Project tracking/reporting:

Quality control:

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Completion date:

\*All tile numbers are estimates based on a typical statewide acquisition in one year

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**PLANIMETRY, BUILDING POLYGONS**

**Specific Activity or Work Package:**

**Optional Planimetric Building Polygons:**

- For 1"=200' or (1:2400) scale source mapping (1' GSD imagery): all structures with roofs having an aerial coverage of 200 square feet or greater will be captured from the photography as a polygon. Buildings will be delineated by tracing the apparent edge of the roofline for dwellings, businesses, houses, barns. Where appropriate, buildings will be squared at the corners so that the corners are orthogonal and within the established mapping accuracy tolerance for 1"=200' (1:2400) scale mapping. Data collection will be done in 3D. The compiled data will have the elevation of the roof line.
- For 1"=100' or (1:1200) source scale mapping (6" GSD imagery): all structures with roofs having an aerial coverage of 100 square feet or greater will be captured from the photography as a polygon. Buildings will be delineated by tracing the apparent edge of the roofline for dwellings, businesses, houses, house trailers, garages, barns, and accessory structures. Where appropriate, buildings will be squared at the corners so that the corners are orthogonal and within the established mapping accuracy tolerance for 1"=100' or (1:1200) scale mapping. Data collection will be done in 3D. The compiled data will have the elevation of the roof line.

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## Exhibit B – Fees and Pricing

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The 2006 Virginia Base Mapping Program digital orthophotography acquisition is comprised of the following products.

Primary/Final Product is digital orthophotography, base digital terrain model (DTM), and all ancillary data products, reports, and material related to DTM and digital orthophotography. Final Primary Product is digital orthophotography by jurisdiction, base digital terrain model (DTM) by jurisdiction, and all ancillary products, reports, and material related to DTM and digital orthophotography by jurisdiction.

Secondary Products are (A) Contours, and (B) structure planimetrics.

### Primary/Final Product Price (I)

Product Price for Primary/Final Product of the VBMP is the sum of:

- (1) the cost of 200 scale 1 foot resolution digital orthophotography products and
- (2) the cost of 100 scale six inch resolution digital orthophotography products

The total cost of 200 scale 1 foot resolution data (1) is the product of (a) the number of 200 scale 1 foot resolution tiles required for the primary/final product and (b) the unit cost per tile.

Estimated Number of 200 scale tiles*:	(a)	43,305
Unit Cost per 200 scale tile:	(b)	<u>\$115.43</u>

**Estimated Total 200 scale tile cost (1) \$4,998,696.15**

The total cost of 100 scale six inch resolution data (1) is the product of (c) the number of 100 scale six inch resolution tiles required for the primary/final product and (d) the unit cost per tile.

Estimated Number of 100 scale tiles*:	(c)	18,529
Unit Cost per 100 scale tile^:	(d)	<u>\$ 85.25</u>

**Estimated Total 100 scale tile cost (2) \$1,579,597.25**

Estimated Total Cost 200 Scale Tiles: (1) \$ 4,998,696.15

Estimated Total Cost 100 Scale Tiles: (2) \$ 1,579,597.25

Unit costs for the 100 and 200 scale tiles are not subject to change. However, the total price may be impacted by fluctuations in the tile counts

**Estimated Total Primary/Final Product Cost\* \$ 6,578,293.40\*\***

**The Commonwealth is not obligated to the estimated total costs listed above. These are good faith estimates only.**

\* The number of tiles for either scale may vary due to administrative, technical, or acquisition adjustments.

^ The unit cost per 100 scale (six inch resolution) tile is \$85.25 for 100 scale tiles successfully acquired in the spring of 2006. The unit cost per 100 scale (six inch resolution tile) for all acquisitions after the spring of 2006 is \$76.90 per tile.

\*\* The Total Primary/Final Product Cost assumes that all 100 scale six inch resolution data is successfully acquired in the spring of 2006. 100 scale (six inch resolution data) captured in subsequent years will be priced at the unit cost of \$76.90 per tile and may affect the Total Primary/Final Product Cost\*.

Tile grids provided by the Commonwealth and mutually agreed upon by both parties will constitute the entire project boundary.

Sanborn may, at its option, elect to deliver 1" = 100' scale products in lieu of 1" = 200' scale products. In that event, Sanborn will deliver the tiles in the resolution and tile grid of the larger scale (higher resolution) product and will invoice the Commonwealth for the price of the smaller scale (lower resolution) product as originally specified by the tile grid.

## **Secondary Product Cost (II)**

Secondary product cost will be the product of the number of tiles included in the optional program and the unit cost as identified below. A setup fee will be applied to Secondary Product orders that occur in any years subsequent to the year in which Final Product is delivered. The final total cost of each program will not be determined until local and state government partners have identified the number of tiles that will be included in each optional program. This document verifies the agreed upon unit costs for each product and the methodology for total cost calculation.

### **A. Contours**

#### DTM for Contours –hydro enforced

200 scale (1 foot resolution) tiles (5,000 feet x 5,000 feet) = **\$36.00 / tile**

100 scale (six inch resolution) tiles (2,500 feet x 2,500 feet) = **\$23.11 / tile**

Total Cost Methodology: The Total Cost will be the product of the number of tiles included in the contour option and the per tile cost for each scale, summed. [200 scale = \$36.00 times (x) the number of 200 scale tiles and 100 scale = \$23.11 times (x) the number of 100 scale tiles].

Setup fee = \$3,000 per product.

### **B. Structure Planimetrics See attached Exhibit D: Structures.xls"**

## Exhibit C – Acceptance Criteria

### VBMP 2006 Orthophotography Project

#### Acceptance Criteria for Associated Professional Services and Products

The final products for the Virginia Base Mapping Program (VBMP) 2006 Orthophotography Project may be tested by VGIN to insure that they meet all or some of the following criteria prior to the final acceptance by VGIN. Quality assurance shall be performed at map scale except as necessary to make measurements or inspect anomalies. Products not passing the measure of acceptability will be returned to Contractor for review and/or correction or replacement. Results of all tests will be documented and shared with Contractor. These criteria represent guidelines and it is understood that variances and/or exceptions may be required. Exceptions shall be made by mutual consent and must be documented in writing.

#### NOTE:

1. Each tested characteristic has been numbered sequentially to aid in communication between Contractor and VGIN. Refer to the numeric ID when discussing a specific tested characteristic.
2. Rapid response projects are not covered by this document for the specific nature of the rapid response delivery.

#### Digital Orthophotography Acceptance Criteria

1.	2. Tested Characteristic	3. Measure of Acceptability
All Scales (100 and 200)		
1.	Media: DVD 2.0, 4.7 GB single sided (4.3 GB usable) USB External Drive, 300 GB	Media is readable, all files accessible, no files corrupted
2.	Media label	Conforms to VGIN specifications. VGIN will work with Contractor to ensure that the layout and design is compatible with Contractor's media writing tools.
3.	File organization	Files written in tile sheet order
4.	File name	All digital file naming conforms to required client convention
5.	GeoTiff & .tfw format	GeoTiff 6.0 compliant; reads in ESRI
6.	Pixel definition	GeoTiff reference will be the upper left corner of the upper left-most pixel World file reference will be the center of the pixel of the upper left-most pixel
7.	Georeferencing	World file has correct coordinates expressed to at least 2 significant digits, and correct pixel size and pixel count
8.	Projection	Virginia State Plane Coordinate System
9.	Datum	NAD83/93 HARN (North and South Zones)
10.	Units	US Survey Feet

11.	24 bit natural color	256 levels of value for each band, 0=black, 255=white
12.	Tonal quality	Less than 2% of values at 0 or 255
13.	24 bit natural CIR with digital capture only not available in 2006	256 levels of value for each band, 0=black, 255=white
14.	Image blemishes and artifacts	<p>Generally acceptable within these limits:  If 1 pixel wide, 100 pixels in length.  If 2 pixels wide, 60 pixels in length.  If 3 pixels wide, 20 pixels in length.  If 4 - 12 pixels wide, 12 pixels in length.</p> <p>Artifacts exceeding these limits may be acceptable if ground feature detail is not obscured, or if the brightness value of the pixels in the artifact is under 170. Artifacts within these limits may be rejected if critical ground features are significantly impacted. Critical features shall be defined as features having County, State or National significance (i.e. Courthouses, Capitol Buildings, etc.).</p> <p>Clusters of artifacts that do not individually meet these criteria may be considered unacceptable if more than 12 are visible within a viewing screen at 1:1 zoom. (5 or more artifacts within a 200 pixel area preferred).</p>
16.	Conformance of sheet to index grid	Sheet will match the client provided grid. There will be no gap or overlap between tiles.
20.	MrSid	The correct compression ratio 18:1 and reads in ESRI software
21.	Mosaic lines	Mosaic lines through buildings and above ground transportation structures shall be avoided to the greatest extent practical.
22.	Metadata	Complies with FGDC standards and runs through the MP parser.
23.	Scratches	Orthoimagery appearance shall be scratch and dust free; sharp uniform balanced color contrast.
24.	Smears	See Image Blemishes and Artifacts Corrected by adding mass points or break lines to DEM as necessary to reflect actual terrain or by image processing where appropriate. Where DTM corrections or image processing will result in reduced horizontal accuracy or misrepresentation of the location or appearance of important features (buildings, roads, etc.), the smear will remain untreated.
25.	Wavy features	See Image Blemishes and Artifacts. 95% of distinct linear ground features (such as road markings, and curbs) shall be positionally correct and should not deviate from their apparent path by more than 5 pixels measured perpendicular to the feature within any 100 pixel distance measured along the feature

		length. On roads, measurements should be taken from centerline of road instead of road edges, shoulder and railings.
<b>1"=200'-scale only</b>		
26.	Ground Resolution	1.0 US Survey Feet
27.	RMSE of known ground points measured on the image <i>See ASPRS Class I Standards Page 8, Table 16, and NSSDA Part 3, Appendices 3-A and 3-D for explanation of formulas.</i>	RMSE <sub>x</sub> = RMSE <sub>y</sub> = 2' (2 pixels) and RMSE <sub>r</sub> = 1.4142 *RMSE <sub>x</sub> = 1.4142*RMSE <sub>y</sub>
28.	Absolute accuracy	NSSDA accuracy (20+ points) such that 95% of the points tested shall meet the criteria of 1.73*RMSE <sub>r</sub> <4.9'
29.	Mismatch of features along mosaic lines and production block boundaries of equal scale	Equal to or less than 2 pixels at 95 % on well defined features (roads, sidewalk curbs) for mosaic lines
30.	Mismatch of features between 200 & 100 scale	Equal to or less than 3 feet as RMSE on well defined ground features (roads, sidewalks, curbs).
31	Sheet size	5000 feet (5000 pixels) East-West by 5000 feet (5000 pixels) North-South
<b>1"=100'-scale only</b>		
32.	Ground resolution	0.5 US Survey Feet
33.	RMSE of known ground points measured on the image <i>See ASPRS Class I Standards Page 8, Table 16, and NSSDA Part 3, Appendices 3-A and 3-D for explanation of formulas.</i>	RMSE <sub>x</sub> = RMSE <sub>y</sub> = 1' (2 pixels) and RMSE <sub>r</sub> = 1.4142 *RMSE <sub>x</sub> = 1.4142*RMSE <sub>y</sub>
34.	Absolute accuracy	NSSDA accuracy (20+ points) such that 95% of the points tested shall meet the criteria of 1.73*RMSE <sub>r</sub> 2.5'
35.	Mismatch of features along mosaic lines and production block boundaries of equal scale	Equal to or less than 2 pixels at 95 % on well defined features (roads, sidewalk curbs) for mosaic lines
36.	Sheet Size	2500 feet (5000 pixels) East-West by 2500 feet (5000 pixels) North-South

### Aerotriangulation Acceptance Criteria

	<b>Tested Characteristic All Scales</b>	<b>Measure of Acceptability</b>
37.	Report Format	Conforms to required convention (to be determined with VGIN in pilot phase). Each block of triangulation shall have a separate report. The contents shall include a narrative and analysis, list of control used and rejected, all statistics stated in RFP sections 3b. and 6.c. page 19, in tabular form, number of control used, graphical output of residuals,
38.	Report Completeness	All information complete and readable
39.	Precision of Image Observations	Sigma (σ) less than or equal to 5 microns is acceptable.
40.	Horizontal accuracy against ground control control check	The ranges from 0.47' to 0.59' and 0.23' to 0.29'.

	points tested in accordance with 10+ points at NSSDA criteria	for 1' and 6" GSD photography, respectively (equivalent to higher and lower flying photography as specified in the RFP)
41.	Vertical accuracy against ground control check points tested in accordance with 10+ points at NSSDA criteria	RMSE values for 1' and 6" GSD photography shall be within 0.72' and 0.36', respectively, (equivalent to higher and lower flying photography as specified in the RFP)
42.	Accuracy against image coordinates	RMSE less than or equal to 5 microns is acceptable.
43.	Max. offsets [E, N] to any one blind QA point	3 * RMSE for that scale
44.	RMSE at GPS residuals and other RFP specified AT statistical data	RMSE at GPS residuals generally less than 10 cm. Provide theoretical accuracy data

### Ground Control Acceptance Criteria

	Tested Characteristic All Scales	Measure of Acceptability
45.	Report Format	Conforms to required convention
46.	Report Completeness	All information complete and readable
47.	Horizontal accuracy against HARN control	Will achieve 1 <sup>st</sup> Order accuracy (10 ppm +100,000) as per <i>Geometric Geodetic Accuracy Standards and Specifications for Using GPS Relative Positioning techniques</i> , by Federal Geodetic Control Committee, August 1989. Generally, standard deviation to existing HARN control within 5-7 cm.
48.	Vertical accuracy against HARN control	Will achieve 3 <sup>rd</sup> Order Class 1 (100 ppm + 1:10,000) as per <i>Geometric Geodetic Accuracy Standards and Specifications for Using GPS Relative Positioning techniques</i> , by Federal Geodetic Control Committee, August 1989. Generally, standard deviation to existing HARN control within 7-9 cm
49.	Offsets [E, N] to any one blind QA point	2 * Standard deviation
50.	NSSDA analysis [E, N] of 10+ QA points	95% within 1/10,000 <sup>th</sup> of the flying height. 1.73 * RMSE <sub>r</sub> or 2.447 * RMSE <sub>x</sub> for that scale for that scale
51.	GPS BASE Station Accuracy	A minimum of 2 base stations will operating during collection – all data will be submitted for OPUS processing with final results overall RMS <3cm – <a href="http://www.ngs.noaa.gov/OPUS/Using_OPUS.htm">http://www.ngs.noaa.gov/OPUS/Using_OPUS.htm</a>

### Digital Terrain Model QA Acceptance Criteria

	Tested Characteristic All Scales	Measure of Acceptability
52	Media DVD 2.0, 4.7 GB single sided (4.3 GB usable)	Media is readable, all files accessible, no files

	USB External Drive, 300 GB	corrupted
53.	File organization	Files written will be of a useable file size not to exceed 2 Gb per file.
54	File name	Conforms to required convention
55	Format	In Microstation DGN format Version 8, all features will have x, y, z values
56	Georeferencing	Locates in proper tile grid cell
57.	Contours DTM break lines & mass point density	Sufficient to accurately build terrain to support contour production.
58	Base Topo DTM points density	Sufficient to accurately build terrain to support ortho production. Sufficient to support accurate orthorectification, but not suitable for generating contours.
59	Continuity	No spikes or holes, no gaps of sufficient size to affect orthorectification, regardless of perspective center.
60	Attributes	Conform to DTM standard

#### Ancillary Data Acceptance Criteria

	Ancillary Data	Measure of Acceptability
61	Ancillary Data	All items will be written to media and verified that they are readable (not corrupt)



Exhibit D - Structure Planimetric Pricing

<b>Name of County</b>	<b>1 Foot</b>	<b>6 Inch</b>
Accomack	\$18,045.12	\$21,654.14
Albemarle	\$32,281.58	\$38,737.90
Alexandria city	\$62,208.74	\$74,650.48
Alleghany	\$7,133.31	\$8,559.98
Amelia	\$4,602.80	\$5,523.36
Amherst	\$12,540.48	\$15,048.58
Appomattox	\$5,253.00	\$6,303.60
Arlington	\$85,312.08	\$102,374.49
Augusta	\$25,368.64	\$30,442.37
Bath	\$2,592.00	\$3,110.40
Bedford	\$22,500.00	\$27,000.00
Bedford city	\$2,804.02	\$3,364.82
Bland	\$2,889.20	\$3,467.04
Botetourt	\$12,315.43	\$14,778.51
Bristol city	\$8,054.53	\$9,665.43
Brunswick	\$7,110.16	\$8,532.19
Buchanan	\$11,038.11	\$13,245.73
Buckingham	\$6,080.96	\$7,297.15
Buena Vista city	\$2,519.89	\$3,023.87
Campbell	\$19,858.00	\$23,829.60
Caroline	\$8,375.87	\$10,051.04
Carroll	\$13,639.39	\$16,367.27
Charles City	\$2,653.41	\$3,184.09
Charlotte	\$5,446.34	\$6,535.61
Charlottesville city	\$17,153.64	\$20,584.36
Chesapeake city	\$72,999.36	\$87,599.23
Chesterfield	\$91,211.81	\$109,454.17
Clarke	\$5,224.01	\$6,268.81
Colonial Heights c	\$8,122.03	\$9,746.43
Covington city	\$3,123.17	\$3,747.80
Craig	\$2,378.75	\$2,854.50
Culpeper	\$14,384.95	\$17,261.94
Cumberland	\$3,807.69	\$4,569.22

Danville city	\$20,103.00	\$24,123.60
Dickenson	\$6,768.00	\$8,121.60
Dinwiddie	\$9,039.47	\$10,847.36
Emporia city	\$2,703.59	\$3,244.30
Essex	\$4,719.33	\$5,663.20
Fairfax	\$352,423.42	\$422,908.11
Fairfax city	\$10,443.55	\$12,532.26
Falls Church city	\$5,255.88	\$6,307.05
Fauquier	\$23,138.70	\$27,766.44
Floyd	\$6,298.22	\$7,557.86
Fluvanna	\$7,993.10	\$9,591.72
Franklin	\$21,540.59	\$25,848.70
Franklin city	\$3,970.43	\$4,764.51
Frederick	\$22,494.81	\$26,993.78
Fredericksburg cit	\$9,964.45	\$11,957.33
Galax city	\$3,112.91	\$3,735.50
Giles	\$6,960.71	\$8,352.86
Gloucester	\$13,735.87	\$16,483.05
Goochland	\$6,547.11	\$7,856.53
Grayson	\$8,043.89	\$9,652.67
Greene	\$5,852.74	\$7,023.29
Greensville	\$4,062.43	\$4,874.92
Halifax	\$15,039.97	\$18,047.97
Hampton city	\$52,753.58	\$63,304.30
Hanover	\$35,359.47	\$42,431.36
Harrisonburg city	\$13,666.66	\$16,399.99
Henrico	\$109,423.95	\$131,308.75
Henry	\$23,722.20	\$28,466.64
Highland	\$1,617.00	\$1,940.40
Hopewell city	\$9,014.70	\$10,817.64
Isle of Wight	\$11,589.07	\$13,906.88
James City	\$21,570.09	\$25,884.11
King and Queen	\$2,771.56	\$3,325.88
King George	\$7,169.81	\$8,603.78
King William	\$5,371.66	\$6,446.00
Lancaster	\$5,980.75	\$7,176.90

Lee	\$9,734.80	\$11,681.76
Lexington city	\$2,470.35	\$2,964.42
Loudoun	\$69,120.23	\$82,944.28
Louisa	\$11,381.32	\$13,657.58
Lunenburg	\$5,212.38	\$6,254.85
Lynchburg city	\$26,850.68	\$32,220.82
Madison	\$5,105.59	\$6,126.71
Manassas city	\$12,637.78	\$15,165.33
Manassas Park ci	\$3,350.34	\$4,020.41
Martinsville city	\$7,034.70	\$8,441.64
Mathews	\$5,059.75	\$6,071.70
Mecklenburg	\$13,440.00	\$16,128.00
Middlesex	\$4,339.00	\$5,206.80
Montgomery	\$32,164.74	\$38,597.69
Nelson	\$7,619.00	\$9,142.80
New Kent	\$5,669.49	\$6,803.38
Newport News city	\$68,832.84	\$82,599.41
Norfolk city	\$92,497.93	\$110,997.51
Northampton	\$5,503.00	\$6,603.60
Northumberland	\$7,225.85	\$8,671.02
Norton city	\$1,957.50	\$2,349.00
Nottoway	\$6,094.79	\$7,313.75
Orange	\$11,243.88	\$13,492.65
Page	\$9,591.59	\$11,509.90
Patrick	\$8,708.92	\$10,450.70
Petersburg city	\$14,631.43	\$17,557.72
Pittsylvania	\$25,218.47	\$30,262.16
Poquoson city	\$3,985.54	\$4,782.65
Portsmouth city	\$38,106.58	\$45,727.90
Powhatan	\$7,477.07	\$8,972.48
Prince Edward	\$7,755.05	\$9,306.06
Prince George	\$11,925.12	\$14,310.15
Prince William	\$94,547.00	\$113,456.40
Pulaski	\$14,468.00	\$17,361.60
Radford city	\$12,718.00	\$15,261.60
Rappahannock	\$3,013.00	\$3,615.60

Richmond	\$3,452.79	\$4,143.34
Richmond city	\$86,892.95	\$104,271.54
Roanoke	\$34,405.19	\$41,286.23
Roanoke city	\$43,589.92	\$52,307.90
Rockbridge	\$8,668.26	\$10,401.91
Rockingham	\$26,844.19	\$32,213.03
Russell	\$11,709.80	\$14,051.76
Salem city	\$10,029.43	\$12,035.32
Scott	\$9,506.00	\$11,407.20
Shenandoah	\$15,446.01	\$18,535.21
Smyth	\$13,432.65	\$16,119.18
Southampton	\$6,772.70	\$8,127.24
Spotsylvania	\$32,378.80	\$38,854.56
Stafford	\$31,886.87	\$38,264.24
Staunton city	\$9,952.44	\$11,942.92
Suffolk city	\$24,503.19	\$29,403.83
Surry	\$2,920.94	\$3,505.13
Sussex	\$4,551.09	\$5,461.31
Tazewell	\$18,328.00	\$21,993.60
Virginia Beach city	\$161,895.11	\$194,274.13
Warren	\$13,196.44	\$15,835.72
Washington	\$21,000.00	\$25,200.00
Waynesboro city	\$8,115.00	\$9,738.00
Westmoreland	\$8,238.00	\$9,885.60
Williamsburg city	\$4,437.47	\$5,324.96
Winchester city	\$10,074.00	\$12,088.80
Wise	\$16,574.28	\$19,889.14
Wythe	\$11,500.00	\$13,800.00
York	\$22,388.06	\$26,865.68